THE GEOGRAPHY OF HIGH SCHOOL TEACHER LEARNING IN COMMUNITIES OF PRACTICE

By

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ABSTRACT

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This study addressed how high school teachers learn through designed and emergent community of practice (CoP) participation. This study also sought to describe the roles that high school administrators played to encourage high school teachers' learning in communities of practice. The study examined high school social studies teachers in Oakland County, Michigan as they learned about the Common Core State Standards (CCSS) to understand how learning about the standards unfolded through CoP participation.

Data from this study showed that teachers participated in a variety of designed and emergent communities of practice which influenced learning. The introduction of the CCSS provided an opportunity to describe how teacher sense making, shared practice, and identity developed through CoP participation. This study also described the mutual engagement, joint enterprise, and shared repertoires of CoPs which emerged as teachers learned about the CCSS. Teacher leadership roles within CoPs changed to facilitate implementation of the CCSS. This study showed how teachers who had multi-membership in CoPs might influence learning. Patterns of teacher CoP participation produced variances in teachers' sense making and shared practice. The resulting variances may have consequences for CCSS implementation in schools.

This study also showed that high school principals played roles to encourage teacher learning in CoPs. Principals structured teacher learning in ways consistent with their own beliefs about how teachers learn. One principal believed teachers learning is socially situated structured

teacher learning though CoPs whose joint enterprise aligned with CCSS implementation. Another principal valued engaging teachers in topics on school culture, which teachers saw as unrelated to their practice. Principals also provided structural conditions such as time for teachers to learn in CoPs. However, this study suggests that providing structural supports should be coupled with focusing teachers on instruction. This study also demonstrated that high school principals and assistant principals play different roles in cultivating teacher learning in CoPs. Assistant principals in both schools had relationships with teachers which allowed them to identify and meet teacher learning needs.

To my loving family: Dave, Drew, Jack, Mom, Dad, Bryan, & Tina. I remember each word of encouragement offered and every loving thought and prayer you sent my way throughout my education. Thank you.

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CHAPTER 1

Introduction

Beginning in 2010, states across the United States began to adopt the Common Core State Standards (CCSS) to compliment state standards for K-12 public education. The call for national standards for students in the United States was at its peak for several reasons. These reasons were summarized neatly in the beginning of Tony Wagner's 2008 manifesto calling for change in public education: the high school graduation rate in the United States is about 70%; only one third of high school students in the United States graduate ready for college along with 65% of college professors reporting high school did not prepare students for college; and the United States was tenth among industrialized nations on standardized test scores (Wagner, 2008). Similarly, studies such as the TIMSS International Achievement in Math and Science (2011) showed standardized tests scores of students in the United States far behind in areas of math and science than the scores of students in other developed nations. Colleges in the United States published alarming statistics showing the number of remedial classes incoming freshmen had to complete to be successful in college (Callan, 2008); and the nations' governors began calling for a new standardized national approach to curriculum. Born out of these cries were the Common Core State Standards (CCSS). The CCSS was heralded as a chance for all states across the United States to raise the level of expectations for students, so that students can enter into courses in college and begin earning credits toward a degree program, and subsequently be prepared to enter into a career ("Common Core State Standards", 2012). The skills and goals outlined in the CCSS reflected a high level of student understanding, thinking, collaboration, and creativity around topics in K-12 education.

High School Teacher Learning and the CCSS

In June of 2010, the State of Michigan's Board of Education adopted the CCSS as a means to build upon its state curriculum in the areas of English language arts and mathematics. Science, social studies, and technical subject standards for literacy were adopted as part of the CCSS with the promise of content standards for Science and Social Studies to come in future years. Since adoption of the CCSS in the State of Michigan, a flurry of activities have taken place to ready teachers to learn about the new standards and what effect the standards would have on curriculum, and therefore, teaching practice. With the adoption of new standards came an immense amount of teacher learning. Teachers were learning about the standards; how the standards would affect their practice; and potential changes to courses, curriculum, and assessment that might take place due to the CCSS. The amount of learning that had to take place in order for teachers to make sense of these standards, align current practice with practice in line with the CCSS, and understand the assessments that would come with the CCSS is extensive. Nowhere was the task of undertaking this type of work more challenging and oftentimes confusing than in high schools. High schools in the United States were notorious for being hard to change due to the size of the teaching staffs, departmentalized nature of the staffs, and historical prevalence of teacher isolation in high schools.

Undertaking the implementation of a national curriculum was a monumental task facing school organizations. One way organizations could successfully navigate change of this magnitude is as Wenger (2000) says "to design themselves as social learning systems" (p. 1350). Social learning systems were based in part on the learning potential inherent in communities of practice (CoPs). In a social learning system, learning took place when the competencies of the COPs in the system were in tension with the experiences of those participating in the system. For

example, the CoPs identified by teachers in this study included social studies departments. The competence of these departments developed over time. With the introduction of the CCSS, the social studies departments and their members have a new experience with which to work. The tension between the competence of the department and the CCSS produced a need for learning to occur. The degree to which the CCSS is different or the same as what members of the social studies department had encountered previously could vary for each teacher in the department, which also means the learning of each department member may vary.

Research on teacher learning provides insight into why cultivating a social learning system in a high school might prove challenging. Beginning with Lortie's (1975) book *Schoolteacher*, researchers have shown the historical tendency of the teacher profession as one of isolation and privacy. Little (1990) also demonstrated how teachers often work alone and how this isolation is a result of pervasive norms of autonomy. Researchers argued that the privacy norms of the teaching profession limit teacher learning capacity (Little 1982, 1990; Rosenholtz 1989; Talbert &McLaughlin 1994). Lorite (1975) also found that norms of isolation among teachers led to a lack of shared technical culture.

Research demonstrated that when teachers learned in CoPs feelings of isolation often associated with their profession when taking on a new task and adopting new pedagogy was reduced (McLaughlin, 1994). The CoP literature demonstrated the link between CoPs and successful implementation of reform. McLaughlin and Talbert (1994) found that teacher CoPs are the most effective opportunity for reform implementation and that when teachers participate in CoPs they feel comfortable to take risks and struggle with their peers as they transform their practice toward reform efforts. Strong norms of teacher collaboration were correlated with student achievement in schools (Elmore et. al., 1996; Louis et. al. 1996; Rozenholtz, 1989).

Research demonstrated that when teachers collectively examine teaching and learning practices, teaching and learning overall are strengthened (Achinstein, 2002; Grossman et. al., 2001; Little, 1990, 1999; Louis & Kruse, 1995; McLauchlin & Talbert, 2001, Talbert, 1994; Westheimer, 1999).

Research also has shown the conditions necessary for developing teacher CoPs to facilitate learning may not yet exist in school organizations. As Feiman-Nemser (2001) asserted, schools would "…have to offer more powerful learning opportunities to teachers..." (p. 1014) in order to allow teachers to learn in CoPs. Current teacher learning opportunities were not sufficient for teachers to learn in consistent, sustained, and meaningful ways, which would be necessary for complex learning (Feiman-Nemser, 2001). Research has shown that high school teachers do seek out opportunities to learn with other teachers. Often times, teachers form COPs on their own time with teachers who teach in the same departments and disciplines (Bidwell & Yasumoto 1999; Cobb et. al.2003; Stodolsky & Grossman 1995). High school teachers face the task of implementing the CCSS into their practice with little consistent and meaningful time built into their workday to participate in COPs in order to implement the CCSS. The upcoming section demonstrates an equally daunting dilemma for high school administrators.

Administrators and the CCSS

High school principals and assistant principals (referred to as administrators from this point forward) were faced with leading teacher learning about the CCSS. Administrators developed plans to structure teacher learning about the CCSS; build in time for teacher learning on the necessary changes to curriculum, instruction, and assessment; and lead teachers as they prepare to assess students using a new suite of common state assessments to measure the extent to which students are learning the new expectations. As administrators looked for ways to

cultivate teacher learning about the CCSS, many could embrace the learning inherent in COP among teachers to improve teacher and student performance.

Administrators understood that the link between teacher learning and student learning was important. If teachers learned about the CCSS and made changes in their teaching practices then supposedly these changes would translate into improved student achievement on the state assessments used. Under the premise of which the CCSS was adopted, student learning would also equate to increased high school graduation rates, be better prepared and competent in college, and students would be prepared to participate in the new "knowledge economy" (Wagner, 2008). In effect, high school teacher learning, as facilitated by administrators, could move students in the United States to the head of the knowledge economy.

As research continued to demonstrate the link between teacher collaboration, teacher learning, and student achievement, as well as the benefits that CoPs brought (Bryk et al., 1999; Coburn, 2008; Grossman, 2001; Hord, 1997; Louis et al., 1996; Printy, 2008; Scribner et. al., 1999; Young, 2006), administrators were increasingly aware that one of their main roles was to cultivate competent CoPs. Cultivating CoPs was a component of administrator practice that can be very complex. Printy (2008) found that administrators could act as agenda setters to establish a vision for teachers' work. She also found that administrators act as knowledge brokers to focus teacher conversations and learning as needed. As knowledge brokers, administrators also build consistency in sense making across COPs. Finally, administrators also could act as learning motivators as they "establish urgency for new approaches and hold teachers accountable for results, in essence tightening the connections between policy and practice" (p. 199). Administrators became aware of the importance of their roles in cultivating teacher learning in COPs.

Problem Statement

The above paragraphs set the stage for inquiry into a complex problem facing teachers and administrators. Teacher learning needed to occur for successful implementation of the CCSS. Administrators can encourage teacher learning by developing social learning systems through the use of CoPs. Historically, the teaching profession is one of isolation and conditions for teacher professional learning opportunities still fall short of those needed to have consistent and sustained learning take place. Research over the past 30 years suggested that schools should invest in developing COPs (Cochran-Smith & Lytle, 1999; Feinman-Nemser, 2001; Lieberman & Pointer Mace, 2008; Louis & Kruse, 1996; McLaughlin & Talbert, 2001; Opfer & Pedder, 2011; Printy, 2008; Scribner et al., 1999). The researchers agreed that administrators were at a crossroads where teachers, their learning, and the communities in which they learned were important if the CCSS were to be implemented successfully. Many school districts approached reform efforts, such as the CCSS, using the learning potential in CoPs to create opportunities for teachers to learn. As Etienne Wenger & Snyder (2009) pointed out, knowledge is driving the present economy and teachers are expected to provide students with skills needed to participate in the knowledge economy, CoPs were viable options to facilitate teacher learning. To examine these options, I investigated how teachers learn, as well as the formal and informal CoPs in which teacher learning takes place. In addition, the approaches that administrators used to cultivate teacher learning also was investigated.

Research over the past 30 years described how teachers belonged to a variety of CoPs: some formal CoPs (school wide, department, grade level, subject) and some informal CoPs (teachers located in the same hallway, teachers with the same lunch or planning period, teachers who grouped together through personal and professional affinities, etc.). Research also described

how participation in each of these communities held potential for teacher learning. Some research also demonstrated how teachers interacted with each other and focused on the relations that span across multiple CoPs, along with the combined effects on teacher practice (Bidwell & Yasumoto, 1999; Coburn, 2001; Spillane, 2005). The current body of research did not include works that considered high school teacher learning in both formal and informal CoP, and how the various CoPs to which teachers may belong could lead to teacher learning.

A gap in the literature on teacher CoPs also failed to define combinations of community membership and how CoP participation could result in teacher learning. Typically, research looked at formal communities (Coburn, 2001; Grossman, 2004; Young, 2006) or informal CoPs (Printy, 2008). The present research considered formal and informal CoPs to which teachers may belong as identified by teachers and school principals. This research then described how teacher learning is influenced by the communities as they exist in a complex and nested environment, possibly influencing each other. This dissertation addressed gaps in research by focusing on CoPs to which teachers belonged as they affected three specific aspects of learning: sense making, practice, and identity. The purpose of this study was to fill the gap in existing descriptions of teacher learning in CoPs and provide detailed knowledge to understand teacher learning in multiple formal and informal CoPs further.

Research showed that administrators played four main roles when facilitating teacher learning among CoPs: setting goals, acting as instructional leader, collaborating, and holding teachers accountable (Coburn, 2001, 2008, Printy, 2008, Stein & Nelson, 2003; Young, 2006). The present research also investigated the roles that administrators played when working with teachers in formal and informal CoPs to cultivate teacher learning. Few studies examined administrators' roles as they worked with CoPs (Coburn, 2001 & 2008, Printy, 2008, Stein &

Nelson, 2003; Young, 2006), but none explicitly examined high school principals *and* assistant principals An additional purpose of this research was to describe how administrators and their leadership practices cultivated teacher learning. Previous studies identified leadership practices, but sometimes failed to answer the why and how of linking leadership practices with teacher learning.

Research Purpose and Questions

Teachers needed to learn about the CCSS to adopt the standards into their practice successfully. Teachers might have preferred to learn about the CCSS in a variety of ways; however research has demonstrated that COPs could be an effective ways for teachers to implement something new (Coburn, 2001; Louse, Marks, & Kruse, 1996; McLaughlin & Talbert, 2001). Understanding the types of informal and formal COPs in which teachers participate and how they influence teacher learning and implementation of the CCSS is important. The main purpose of the study was to help fill gaps in existing research on teacher learning in CoPs. This study also examined leadership practices that may cultivate teacher learning in CoPs. Specifically, this research more fully described the complex components of teacher learning as sense making, practice, and identity and which type of CoP may influence specific components of teacher learning. Understanding how participation in CoPs result in teacher learning was important so that researchers and practitioners could understand and promote teacher learning. Another purpose of this study is to describe leadership practices used by high school administrators that cultivate teacher learning in multiple CoPs.

The research questions under study were:

1. How do formal and informal communities of practice influence high school teachers' sense making?

2. How do formal and informal communities of practice influence high school teachers' shared practice?

3. How do formal and informal communities of practice influence high school teachers' identity?

Figure 1.1 is the conceptual model under study in the present research. The right side (orange box) and middle boxes (blue boxes) represents research questions 1-3. The model represents the inquiry into how both formal and informal CoPs influence teacher learning. The three aspects of teacher learning are represented in the orange box. The reciprocity of the model supports the aspects of teacher learning and both formal and informal CoPs. These relationships represent the hypothesis that as teachers participate in formal and informal CoPs, teacher learning is influenced. Another way to explain the dual directionality of the relationships is that as the practice of the community is influenced, teacher learning takes place. The green oblong shape represents high school administrators. Principal and assistant principal are listed separately because they may play different roles to encourage teacher learning. Research question 4 provides additional information about high school administrators' influence on formal and informal CoPs.
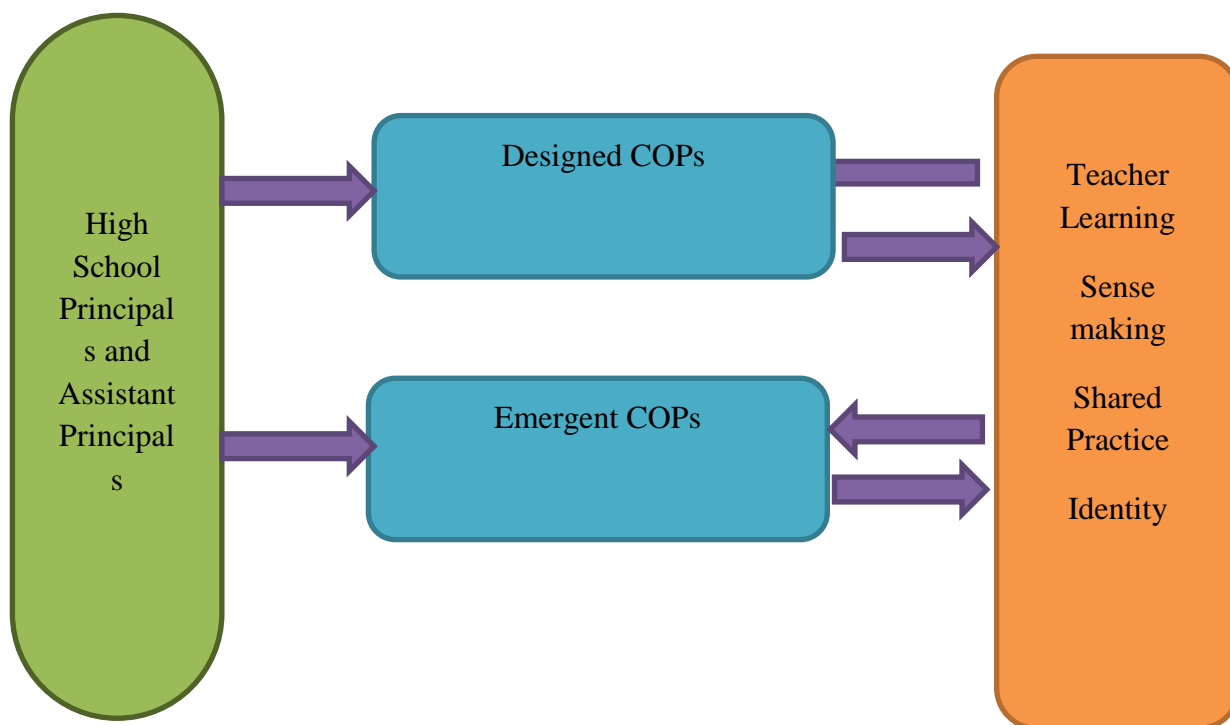
Figure 1.1 Conceptual Model: High School Teacher Learning in Multiple Cops, and the Role of Administrators.

Context

This study took place in a large suburban school district in the State of Michigan. The school district has three comprehensive high schools, two of which were used in this study. The State of Michigan adopted the CCSS in 2010. The study took place during the 2012-2013 school year as the entire school district was engaged in learning about and preparing to implement new practices related to the CCSS. The study included social studies teachers from two of the three high schools in the school district, the principals, and one assistant principal from each high school. Social studies teachers in particular were affected uniquely by the release of the CCSS because the discipline was provided with literacy standards instead of content specific standards. Social studies teachers spent time during the 2012-2013 school year professional development

discussing the CCSS literacy standards and their inclusion the content area. Social studies

teachers were able to see proposed standards for their content area before the school year ended.

The school district began preparing for the CCSS in earnest the year the study took place.

As teachers and administrators were being interviewed for this study, they were learning about

the CCSS either in formal opportunities such as professional development or informally in a

variety of ways. Some informal learning occurred during meetings between administrators, at

department meetings which administrators sporadically attended, and learning through a variety

of social media outlets. The CCSS and the Smarter Balanced assessments that were expected to

begin during the 2014-2015 school year dominated the professional development landscape in

the school district during the 2012-2013 school year. Since then, with the uncertainty of

Michigan's ability to fund the Smarter Balanced assessments due to recent legislation, teachers

have focused on the actual standards and their effect on teaching practices.

Definition of Terms

Administrators: High school principals and assistant principals are units of study in this research.

The use of the term administrators refers to both high school principals and assistant principals.

The research will cite each role separately when it is important to separate the two roles.

Advanced Placement: Advanced placement courses are courses within subject area disciplines

with standardized curriculum. Teachers who teach advanced placement course often attend

yearly training through the governing body of advanced placement, the College Board.

Traditional conceptions of AP classes in the State of Michigan are that students enroll in AP

courses to prepare for higher education courses.

Common Assessment: teachers in a subject area administer the same assessment. The purpose of

common assessments in the school district under study is for teachers to compare student

achievement results, guide instruction based on assessment data, and improve assessment validity and reliability when necessary.

CoP: Wenger & Snyder (2009) defined CoP as "groups of people informally bound together by shared expertise and passion for a joint enterprise"

Designed CoP: formal CoP were identified by each participant in the study. It may be useful to think of formal COP as the school wide, department, and subject communities that exist in a school and school district. Terminology is from Printy (2008)

Emergent CoP: informal CoP were identified by each participant in this study. It may be useful to think of informal CoP as CoP that come together in a variety of formats including online, social, across disciplines, and often between colleagues in different schools and school districts. Terminology is from Printy (2008).

Teacher learning: for this study teacher learning was defined as interplay between sense making, shared practice, and identity.

Social learning theory: The theory of social learning is based on four main premises about learning. The first premise is that humans are social beings and our social nature is vital to learning. The next premise is the belief that knowledge is about being competent in the work that we value. The third premise is that knowing is participating in the work that we do. Finally, the last premise is the sense making we make through our experiences and engagement in the world is produced through learning. Outside the four premises that underlie the social theory of learning, there are four components used to "characterize social participation as a process of learning" (Wenger, 1998, p. 4)

The common core state standards: a set of national standards in the United States. The standards were designed to provide a framework for school districts to use in conjunction with their state

level content standards. Nearly every state in the United States adopted these standards

beginning in 2010.

CHAPTER 2

Review of Literature

The far right side of Figure 1.1 described the definition of teacher learning as conceptualized for this research. One assumption of this research is that each community of practice (CoP) teachers participated in could influence learning. Therefore this research was to determine how teachers learn in CoPs. The elements of teacher learning under study in this research were represented in the CoP literature and were found throughout nested and complex layers of the multiple contexts and CoPs where teacher learning could take place. At the core of this research was the philosophy that learning takes place socially through CoP participation (Opfer & Pedder, 2011; Wenger, 1998).

In the upcoming sections the elements of teacher learning in this study: sense making, shared practice, and identity and how the concepts are inter-related are presented. Along with each of the elements of teacher learning, the review of literature is structured to provide a basic level of understanding of social learning theory, and teacher learning in CoPs. The review of literature draws upon recent literature to establish the definition of teacher learning that is the focus of this research. The review concludes with a review of the literature on the roles that administrators play to encourage teacher learning in CoPs.

Social Theories of Learning

Social theories of learning are based on four premises (Wenger, 1998). The first premise is that humans are social beings and social nature is vital to learning. The next premise is the belief that knowledge is about being competent in the work that we value. The third premise is that knowing is participating in the work that we do. Finally, the last premise is the sense making through experiences and engagement in the world that are produced through learning. Beyond

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the four premises that underlie social theories of learning are four components used to "characterize social participation as a process of learning" (Wenger, 1998, p. 4): sense making, practice, community, and identity. Wenger defined sense making as learning by experience; practice as learning by doing; community as learning by belonging; and identity as learning by becoming. Understanding the social theories of learning is important so that CoPs and what constitutes learning in COPs can be identified. Learning in social theories of learning is demonstrated in Figure 2.1.
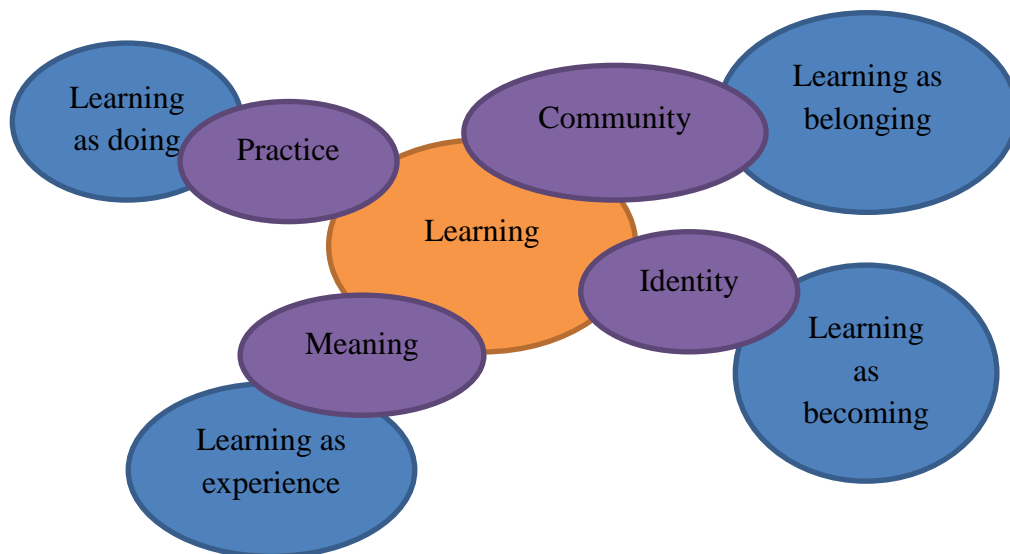
Figure 2.1 Four Premises of Social Theories of Learning (Wenger, 1998, p.5)

High school social studies teachers' work includes designing lessons, teaching, assessing, and working with adults and students. On a daily basis, teachers might be challenged with routine and non-routine components of their work that make them feel more or less knowledgeable about their practice. One day teachers might feel that they know a great deal about their work because they are engaged in tasks about which they are knowledgeable. The next day, an administrator might ask them to work with another teacher to pilot a new reading

strategy in their social studies classroom. Teachers might feel less knowledgeable about implementing a new strategy into their practice. As teachers interact with their colleagues, sense making occurs as they implement the strategy. Teachers become engaged in practice (e.g., learning about the strategy, designing a lesson and assessment to incorporate the strategy into their classroom, reflecting with colleagues, interacting with administrators during the process). As teachers in their CoPs learn about the strategy, the strategy shapes the practice of the community. Identity also forms through CoP participation (as compared to her past role and her role in this new situation). This is an example of how teacher learning takes place through the process of implementing the reading strategy into their practice.

Communities of Practice

The concept of practice in CoPs is comprised of many factors that are described in the upcoming sections. Practice is the work that teachers do through their participation in communities. This work, shaped by teachers' identities, has evolved along with collaborative work, enterprise, and repertoire of the community (Wenger, 1998). Wenger defined practice as activities that provide resolution to conflict, support community memory, generate perspectives and terms needed for work, and contribute to the daily "rituals, customs, stories, events, dramas, and rhythms of community life" (Wenger, 1998; p. 46). Practice is evident as activities, behaviors, and actions that allow teachers to do their work. Members in a CoP share similar beliefs, world views, values, and norms which guide communities practice (Coburn, 2001; Weathers 2011). Weathers (2011) described the pull of shared beliefs, values, and norms as the binding mechanism which compels community members to participate.

Practice is a complex construct that reflects a number of actions and orientations. In a CoP, learning takes place as practice evolves. Practice is a constant process, involving

participation and reification. Practice also is an ongoing engagement in joint enterprise, mutual engagement, and shared repertoire. These variables and their relationships are described in detail in the upcoming sections.

Research on CoPs has evolved over the past 30 years as educators, practitioners, and researchers witnessed the learning potential of CoPs. Research on teacher communities provides examples of how CoPs improved teacher learning and practice. Strong professional communities have changed teacher practice and led to improved student learning (Scribner, 2002). Teacher communities also have been viewed as ways to allow teachers to reflect on and improve their practice to increase student learning (Louis, Kruse, & Marks, 1996). Studies have shown that teachers in strong professional communities have higher expectations for their students than teachers in weak professional communities (Bryk & Drischoll, 1988). Strong professional communities have been known to affect change in teacher practice resulting in improved, authentic pedagogy and improved student achievement in core content areas (Scribner, 2002). Arranging teachers' work collaboratively in CoPs can lead to de-privatization of practice and sharing of skills to build on their repertoire.

Wenger (1998) defined competence in CoPs as the inter-play between three elements: joint enterprise, mutual engagement, and shared repertoire. Joint enterprise is the understanding that members share regarding the purpose of the community, and the focus the community has on holding members accountable for learning geared toward that purpose (Wenger, 2007). Mutual engagement occurs as members of communities interact, define relationships between themselves and those outside the community, and establish norms. Mutual engagement also involves knowledge of how community members interact productively: who plays which roles, who possesses expertise in certain areas, and who can be trusted to carry out tasks. Mutual

engagement requires trust in the community so members can rely on each other to contribute to community goals and address conflict if it arises (Wenger, 2007). Shared repertoire of a COP is embodied in the language, tools, artifacts, concepts, and history used as the community examines its practice (Wenger, 2007).

Degrees of Participation in CoPs

Members of CoPs could be involved at any combination of three degrees of participation: core, active, and peripheral. The smallest group of participants (10-15%) in a CoP belonged to the core. These core participants keep learning at the forefront of the community and identify areas about which communities need to learn more. Wenger, McDermott& Snyder (2002) stipulated that the core of a CoP also included leaders of the community. Active members (15-20%) of the community regularly participate in meetings, group functions, and other routines of the community, but are not central to the leadership function to the same extent of core members. Peripheral members (40-60%) rarely participate in community activities. The peripheral members take what they need from communities. The extent of their participation varies depending on the practice of the CoPs engagement or simply remains on the periphery (Wenger, McDermott& Snyder (2002). Active movement of community members between the degrees of community participation is healthy (Wenger, McDermott& Snyder (2002).

Some members of CoPs act as brokers. Wenger (1998) defines brokers as actors who are able to "make connections across CoPs, enable coordination… and open new possibilities for meaning (p 109)". Brokering involves helping CoPs make sense of, organize, and align viewpoints. In order for brokers to initiate learning they must have legitimacy with the CoP. Of legitimacy Wenger states that brokers "…yield enough distance to bring a different perspective, but also enough legitimacy to be listened to (p 110)".

Positive Outcomes of Participation in CoPs

Research on CoPs has found that dense faculty ties increase as groups diagnosed and solved problems (Wood, 2007). As teachers cultivated common pedagogy and agreed on teaching techniques, consistent use of common techniques converged and intensified. Wood (2007) asserted that when teachers perceived their colleagues were making strong academic demands of their students, they also made similar demands. Research also indicated that when experienced teachers had opportunities for collaborative inquiry and related learning, a body of wisdom about teaching resulted that could be shared within the CoPs (McLaughlin & Talbert, 1993). Louis and Kruse (1995) reported that teachers in productive CoPs were willing to accept feedback and work toward improvement.

CoPs within schools had positive effects on instructional strategies (Galluchi, 2003). Arranging teachers' work collaboratively in CoPs results in a de-privatization of practice that generates a sharing of skills and builds the repertoire that teachers have available to meet student needs (Louis, Kruse, & Marks, 1996). CoPs allow teachers to reflect on and improve their practice to increase student achievement (Louis, Kruse & Marks, 1996). CoPs also have implications for student achievement. When teachers talk to each other about problems associated with teaching, and designing solutions to problems of teaching, a collaborative environment develops that support student achievement (Little, 1982). Rosenholtz (1989) found that teacher collaboration was a strong predictor of student achievement in both math and reading.

Negative Outcomes of Participation in CoPs

It also was necessary in this research to understand the negative aspects of COPs that might become known through teacher and principal interviews during this research. Through

participation in COPs, teachers often found conflict. In fact, research on conflict in COPs found that conflict is "central" to community. As members of COPs navigated conflict, they did so based on the shared histories and political talents of the individuals in the community. According to Achinstein (2002), COPs that could handle conflict successfully had "greater potential for continual growth and renewal" (pg. 448) and for increased learning.

Hargreaves (1994), in his research, also cautioned against blind assumptions of collaboration and collegiality as creating positive outcomes for both students and teachers. Hargreaves argued that the power to make independent decisions about curriculum and lessons was important to many teachers. If school requirements forced teachers to work together and if collaboration was seen as an erosion of these personal choices, unhappiness and dissatisfaction could result. Hargreaves argued that genuine collaboration and collegiality resulted when working relationships among teacher were spontaneous, voluntary, developmentally orientated, and pervasive across time and space. Contrived collaboration occurred when collaboration was administratively regulated, compulsory, implementation-orientated, fixed in time and space, and predictable.

A negative outcome of mutual engagement and joint enterprise resulting in participation in COPs was the development of pseudocommunity. These groups of teachers acted as if they were a community with shared norms, values, and beliefs that already existed. These communities relied on the elimination of conflict to maintain their group dynamics. Norms of interaction in these groups included not challenging others, not asking for clarification, acting as if the group agrees, maintaining perpetual consensus, and regulating speech in the group by allowing a group leader to dominate the conversation. No effort was made to obtain thoughts of those group members who were less vocal, with conflict a "behind the scenes" activity. In

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addition, group members maintained their individual identities as social roles with which individuals were comfortable (Grossman, 2001).

Designed CoPs

This study explored how individual teacher learning was influenced by the various COPs to which teachers belong. Teachers may learn through participation in multiple COPs. When viewing teacher learning in more complex contexts of school wide, department, subject, and grade level communities, it was possible to have a fully developed understanding of variables that could affect teacher learning (Opfer & Pedder, 2011). For purposes of this study, formal CoPs are conceptualized as convening in predetermined locations and times. The mutual engagement of formal CoPs is set by agendas or stated goals. In formal CoPs established leaders manage a progression of activities through an agenda throughout the course of the meeting. The joint enterprise of the CoP often moves along during a set time frame, in a sequential or patterned order with a stated end product or clear termination of the enterprise for each meeting occurrence.

Teachers often changed, modified, or added to their practice when given new demands, such as the higher standards of Common Core State Standards (CCSS). Coburn (2001) found that teachers were more likely to incorporate learning into their practice when the learning occurs in the CoPs with which they primarily identify. Coburn asserted that teachers were more likely to incorporate learning into their practice when the learning occurs in the CoPs in which they primarily identify, focusing on these communities is reasonable as possibilities for influencing teacher sense making, practice, and identity.

School wide CoPs

Teachers may learn in a school wide CoP. Research showed that school wide CoPs could influence norms of collegiality and professional growth. A strong school mission also can influence a culture of collegiality in schools (McLaughlin, 1993). Teachers' perceptions of school wide CoPs could influence elements of teacher learning. High school administrators may use school wide CoPs to present ways to implement CCSS and cultivate teacher learning about CCSS. Coburn (2001) found that school wide CoPs may be formal settings which might not allow teachers the sustained time needed to consider important issues central to their practice. In her research she showed that school wide CoPs to implement a new policy can be "highly structured", guided by assignments from administrations, and seemed disconnected from teachers work (p 158).

Typically, school wide CoPs in high schools convene for professional development, school improvement, and staff meetings. Activities of school wide CoPs may vary, especially if the school community is engaged in an ongoing project such as implementing the CCSS. For example, administrators may use staff meeting in order to overview the CCSS and introduce the standards. Each staff members participation in school wide CoP to varying degrees. Many times participation is based on the staff members' connection to the school mission, level of collegiality among the staff, and norms of collaboration.

Department CoPs

High school teachers might learn in department CoPs, using traditional arrangement of high school departments by subject areas. High school teachers also may learn in CoPs with colleagues who teach similar content or courses. Research shows that high school department CoPs assist teachers to reconcile consequences of the broader organization on their own work

(McLaughlin & Talbert, 2001). Research demonstrates how the size of departments and school, coupled with multiple initiatives taking place might at times compete for attention and impede reform (Fullan, 1991; Louis, Marks, & Kruse, 1996; McLaughlin & Talbert, 1993; Siskin, 1994).

Teachers in the same department can also offer a means to build shared norms and standards for students (McLaughlin, 1994). While the school wide CoP might be implementing CCSS, the department could act as a buffer to determine the extent that the reform influences teacher practice. According to Siskin &Little (1995), high school teachers typically identify deeply with their subject departments because they took similar college courses and interacted with like-minded professionals with similar educational backgrounds. Siskin & Little (1995) argued that high school teachers also may spend time with their departments because they were a "…critical site for teachers' sense of identity, practice, and professional community, deeply woven into the social, political, and intellectual workings both of the profession and of the individual schools" (p. 605).

Teachers in subject departments can terminate efforts to implement curriculum reforms, such as the CCSS, whether they intend to or not (Grossman & Stodolsky, 1994; Little, 1995; Siskin, 1994). Research has shown how teachers can reinforce norms of negative practice and possibly sabotage reform efforts.

McLaughlin and Talbert (2001) defined two categories of departments. The first was the category of department that reinforced traditional norms of believing that the purpose of school is to sort and separate students, use teacher-centered techniques (lecture), and provide the same curriculum regardless of their student population. The second type of department category is one where teachers adjust their teaching to the needs of the students, and employ student-centered teaching techniques to engage students (McLaughlin & Talbert, 2001). Department CoPs also

have been found to influence how teachers set expectations for students, and how teachers think about pedagogy (Stodolsky & Grossman, 1995).

As school districts coped with implementation of CCSS, they used departments to make sense of the standards and organize pedagogical tasks. Administrators could ask departments to align the new curriculum with their current curriculum. Given the high level of focus CCSS places on reading in content areas (e.g., science, social studies, and technical areas), cross-department CoPs might be used to implement CCSS. Of particular interest for this research are the types of communities that administrators use to accomplish various tasks associated with the implementation of CCSS.

Teachers in a social studies department may be engaged in a community that serves to make sense of the CCSS as the teachers learn new pedagogy. Teachers may be encouraged by their department's willingness to take risks as they implements the CCSS, reflect on learning, and make collective gains toward modifying department practice and student achievement. Or, teachers also may be a member of a department community that buffers the CCSS initiative. Perhaps department members believe they can take the current curriculum, integrate some CCSS standards into the present curriculum maps and pacing guides, and claim the department has implemented the CCSS. If either of these types of department CoPs align with teachers sense making, practice, and/or identity then teacher learning may be influenced.

Course level CoPs

A third type of CoP in which learning may occur is among peers who teach the same courses. These CoPs could provide support for innovation and change. Research showed that these CoPs assisted in the work of building a technical practice of instruction as teachers developed and worked with curriculum (McLaughlin, 1994). In large, comprehensive high

schools, departments can include a large number of teachers. Breaking down departments among peers who teach the same or similar courses may help them to focus on their specific course content. For example, CCSS standards indicated "grade bands" of 9-10 and 11-12, which could be CoPs that convened as teachers learned about and implemented the CCSS. Another example could be the ninth grade social studies teachers meeting to discuss curriculum while tenth grade teachers also meet and then bring the two communities together.

Course level CoPs membership generally is comprised of teachers who teach the same course. Typically, course level CoPs members also teach the same age level grade of students in that course, as most core courses are organized by subject and grade. Among the course level CoPs, teachers learn about content knowledge, teaching strategies, and assessment techniques specific to the course they share in common. Course level CoPs may develop unit and lesson plans, as well as share activities.

Emergent CoPs

One premise for the present study is that teacher learning occurs in multiple formal and informal COPs. For purposes of this study, informal COPs are those in which teachers voluntarily participate. As teachers practice together over time in informal CoPs, a shared history forms among community members. The mutual engagement, joint enterprise, and shared repertoire of CoPs takes place nested in this shared history (Odfer & Pedder, 2011; Wenger, 1998). Informal communities could convene for a several reasons, such as: teachers being in similar proximity, social groups affiliation (e.g., coaches, fine arts teachers, etc.), teachers who are of similar age, and other possible reasons. Informal CoPs could be online environments where teachers engage with other professionals outside of their schools. Teachers and

administrators in the present study identified which informal communities in which teachers learned.

Mutual engagement is a voluntary choice in informal CoPs (Wenger, 1998). Teachers choose to participate in informal communities because they gain something as a result of participation. Membership in these CoPs is fluid, with teachers moving through the degrees of participation in ways that fit their needs. The joint enterprise of informal CoPs is defined by community members. Communities produce shared repertoire to support the joint enterprise of the community rather than as a result of being assigned a task by an administrator.

Throughout this research, teachers may identify variations of CoPs that influence their learning. Many CoPs, which exist in the same school organization, practice in highly complex and nested environments (Odfer & Pedder, 2011). Communities may be formal or informal, with teachers having multiple memberships throughout the organization that shape their learning. Adoption of the CCSS provides a context for researchers to examine teachers' participation in a variety of formal and informal CoPs and the influence of their participation on learning. The nested environments in which CoPs exist create possibilities for patterns of participation to emerge that provides a narrative about high school teacher learning. Figure 2.3 represents the nested contexts that might cultivate teacher learning in CoPs and highlights those the researcher anticipated could be reported by teachers in this study.
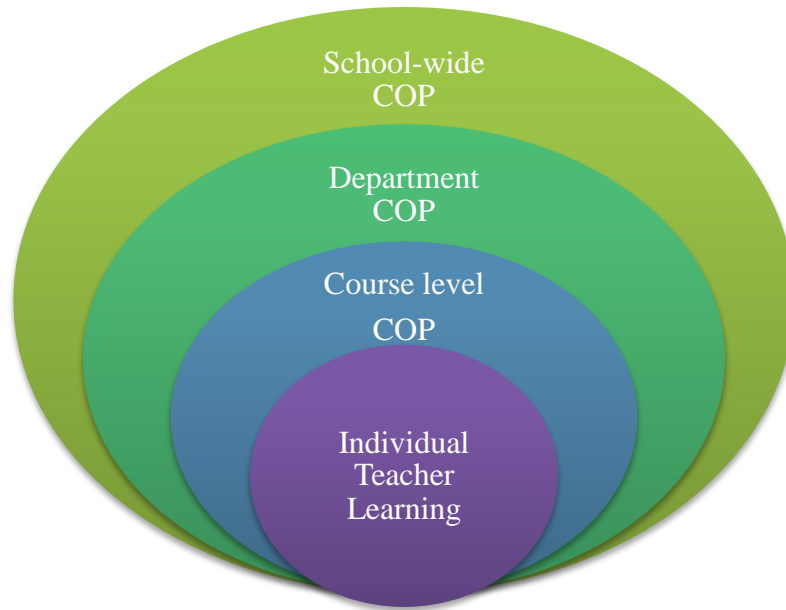
Figure 2.2 Example of High School Teacher Learning in Complex Nested Environments

Figure 2.2 demonstrates possible complex, nested layers of CoPs that may influence teachers' learning. Individual teacher learning is located purposefully in a way that indicates the belief that the individual layer of learning takes place through multiple layers of nested environments. The school-wide, department, course level, communities may influence the practice of CoPs and their members reciprocally.

Teacher Learning in CoPs

One criticism of research in the area of teacher learning is that researchers were using simple conceptualizations of teacher learning, leading to inaccurate conclusions about the influence that CoPs have on teacher learning (Opfer & Pedder, 2011). This research used a complex conception of teacher learning that combined research with Wenger's beliefs about learning as a social process (Figure 1.1). Teacher learning in this study was defined as the combination of sense making, shared pedagogical repertoire, and identity. The upcoming sections define aspects of teacher learning used in this research and provide practical examples of what this researcher considers evidence of teacher learning.

Sense making

Teacher learning in CoPs is comprised in part of learning that takes place through sense making. The present study examines how formal and informal CoPs participation influence sense making. Coburn (2001) defines sense making as "how teachers notice new messages and construct understanding of them through their preexisting practices and worldviews" (p. 147). She states that sense making is a collective and situate activity. Collective sense making takes place in CoPs through social interactions among members. Collective sense making produces what Coburn calls "shared understandings (p. 147) about organization specific beliefs and routines. These beliefs and routines are situated in the specific context of each CoP and reflect the "organizational values and traditions and broader professional culture" (p. 147) of each school. Teacher learning in CoPs often centers on three components of teacher practice: content knowledge, core teaching beliefs, and teaching strategies. The definition of sense making used in this research also comes in part from Wenger's (1998) concepts of negotiation of sense making. Sense making is negotiated through participation and reification.

Negotiation of Sense Making

As teachers participated in CoPs, they negotiated sense making on a daily basis. Teachers negotiated sense making in CoPs by "being a member of a community and bringing to bear its history of participation in its practice" (Wenger, 1998). Negotiation of sense making was continually changing based on the practice and membership of the community. Factors outside the community may also influence how sense making occurs. For example, negotiation of sense making took place when teachers in the district-wide social studies department began learning about the CCSS. Teachers began personal, internal negotiations of sense making based on their own historical and social knowledge of CoPs and how the CCSS compared to that knowledge. If

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teachers had negative experiences in implementing new content standards, the enterprise of the community might serve to impede CCSS implementation. As more experienced teachers recalled similar standards that have "come and gone" and shared their experiences with novice teachers, the enterprise of the community could be that of maintenance. According to Wenger, (1998) negotiation of sense making was constant and was part of the learning process. The process of negotiating meeting added to overall teacher learning and unfolded through two sub-processes: participation and reification. Participation and reification concepts are described in the upcoming sections.

Participation

Teachers in this study identified participation in formal and informal CoPs to learn about the CCSS. According to Wenger (1998), participation is a mixture of taking part in something ("action") and the relations with others that reflect the taking part ("connections;" p. 55). Participation was active involvement in the community through actions and connections that shaped each participant and community members in turn. Through participation rose the corresponding duality of reification (Wenger, 1998).

Research demonstrated how teacher sense making evolved as teachers participated in CoPs. Coburn (2001) examined how teachers interacted with colleagues as they implemented policies on reading instruction. As teachers "came into contact" (p. 152) with policy messages about reading instruction, they made sense of messages by talking to their colleagues. Coburn demonstrated that when teachers encountered the same policy message, colleagues with diverse worldviews made sense of the message differently. Coburn found that as teachers interacted with each other in sense making activities, formal and informal interactions took place. Teachers tended to turn toward other teachers with similar world views during sense making. Coburn

asserted that COPs played a "gatekeeping" (p 154) role to buffer certain policy messages from the practice of the CoPs for a variety of reasons. She showed that when teachers work together informally, "in facing conversations" (p 158) pertaining to issues that are central to teachers' practice occur. In later research, Coburn and Russell (2008) described the content of these formal and informal interactions and how the interactions cause teachers to implement certain aspects of policy, and change or reject some policy messages based on the interactions in their CoPs (Coburn & Russell, 2008). The researchers found that when districts implement policy, teachers' social networks are influenced through "increased tie span, access to expertise, and depth of interaction" (p. 204).

Sense making is one of three aspects of teacher learning used in this research. CoPs are a constant hub for sense making. This study used interviews to analyze how formal and informal CoP participation influenced teacher learning. Data related to teacher learning are presented as teacher and administrator perceptions to describe how teachers' sense making is influenced through formal and informal CoP participation.

Shared Practice

A second element of teacher learning examined in this study is shared pedagogical practice. Wenger (1998) wrote, "Communities of practice can be thought of as shared histories of learning" (p. 86). Learning in a CoP was a process of "being engaged in, and participating in developing an ongoing practice (Wenger, p. 95)". Through the development of practice, teachers who participate in CoPs could develop a shared pedagogical practice. Shared pedagogical practice is socially defined and situated in the historical and social contexts where teachers work (Wenger, 1998)

Teacher learning used to be considered an individual activity. Lortie (1975) described the

isolation of the teaching profession and likened schools to "egg crate like" organizations where

isolated learning was a prevalent norm. Using these previous conceptions, teacher learning might

have been seen as taking shaped in isolated contexts, such as when an individual teacher attends

professional development (PD). After attending PD, the lone teacher would return to his/her

isolated classroom and implement aspects of the PD he/she deemed worthy of their practice. An

important difference existed between isolated conceptions of teacher learning and social theories

of learning. The difference was that when teachers participated in CoPs, teacher learning evolved

through social interaction, mutual engagement, the development of joint enterprise, and shared

repertoire. When teachers were asked to implement new standards, they participated in a series

of nested CoPs within the school organization to develop a shared pedagogical practice within

and between CoPs. Shared pedagogical repertoire emerged though mutual engagement and joint

enterprise. These two variables along with shared practice were what Wenger defined as

"dimensions of practice." The variables of mutual engagement and joint enterprise are defined

next.

Mutual Engagement

Membership in CoPs involves mutual engagement (Wenger, 1998). Mutual engagement

includes activities and interactions that bring CoPs together. Mutual engagement requires trust,

with a lack of trust a characteristic worth noting as part of the norms of CoPs. Trust could allow

or hinder CoPs from raising challenging issues. Mutual engagement could result in members of a

CoP getting to know each other better, and through this knowledge they could affect each other's

lives. As members of CoPs engaged in activities, the members' roles were re-defined

continuously and could mean something different to each individual. Mutual engagement created

and reinforced norms, shared principles, shared commitments, and expectations (Wenger, 2010).

Joint Enterprise

Joint enterprise was the second characteristic of practice. Joint enterprise was the result of

mutual engagement (Wenger, 1998). Joint enterprise included the vision and purpose that united

and defined the work of CoPs. In the ideal situation, communities would delve into central

questions arising from an acknowledgement of a gap in teachers' knowledge that would help the

CoPs grow. Through joint enterprise, teachers in CoPs continue to learn at the forefront of their

work. If the enterprise is meaningful to CoPs, they should become committed to, and feel

accountable for the enterprise underway.

Mutual engagement and joint enterprise also are related to participation. Wenger (1998)

outlined how participation and reification are complimentary and ongoing. The upcoming section

describes participation as part of the negotiation of sense making that happens in CoPs and

influences teacher learning.

Research has demonstrated how teachers build shared practice that contributes to their

learning. Little (1990) described teachers' joint work, involving encounters among them that

include mutual responsibility for continuing the work of teaching. Joint work advances collective

ideas of autonomy, supports teachers as they take initiative and leadership in developing

practice, and contributes to group affiliation development. Motivation to engage in joint work

may be driven by the "intellectual social and emotions demands of teaching" (p. 519).

Yasumoto, Uekawa, and Bidwell (2001) found that shared practice positively influences student

achievement when a "high rate of collegial interaction reinforces consistent practice" (p. 196).

The authors posited that as colleagues are exposed to consistent and supported monitoring of

instructional practice; use of effective instructional techniques is reinforced. Research also has indicated that circumstances for cultivating teacher learning may be fortified when they jointly question ineffective teaching practices and scrutinized new conceptions of teaching (Achinstein, 2002, Grossman et al. 2001).

Typically in high schools, subject area departments are COPs in which shared practice emerges. Daily work of teachers includes common challenges such as development of instructional strategies and reflection on successful implementation of techniques. Teachers who learn with subject area department colleagues have similar contexts from which to develop instructional strategies to meet content needs (Little, 1994). In addition, department members often share similar physical spaces, such as department offices. They also may be located in the same physical proximity to one another in schools, increasing their propensity to interact. Members of these CoPs socially negotiate the norms of shared practice in daily interactions among teachers. Talbert and McLaughlin (1994) found that teachers who participate in strong COPs in their subject departments have higher levels of professionalism. Levels of professionalism include "standards for curriculum and instruction, evidence of stronger service ethic in their relations with students, and show stronger commitment to the teaching profession" (p. 143). Yasumoto et al. (2001) indicated that subject area COPs encouraged strong networks among teachers where interactions centered on the "everyday work of teaching" (p. 182). These CoPs shared practices included reflecting about instructional methods and provided a place for members to deliberate about instructional practices and results they could produce. Subject area CoPs act as "prime social control mechanisms" (p 182) in the school organization. Talbert and McLaughlin (1993) found that these types of CoPs provided opportunities for teachers to meet on a consistent basis to reflect on practice, review student learning, and share information about

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teaching strategies and resources. Subject area CoPs can support improvement and/or modification of current practice. Subject area departments may develop practices that are effective in their specific school context given CoPs membership, students, and resources with which the CoP interacts (Yasumoto et al., 2001).

Shared Repertoire

The final characteristic important to understanding practice in CoPs is shared repertoire. Wenger (1998) defined the shared repertoire of CoPs as "routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions or concepts the community has produced or adopted…(pg. 83). Teacher CoPs are mutually engaged in building "shared experience, language, artifacts, histories and methods" over time (p 231). Reification is one aspect of participation closely related to shared practice. Participation and reification are complimentary, resulting in negotiation of sense making. In the conceptual framework, these variables were part of teacher practice and part of learning created through a teacher's participation in CoPs.

Reification

Reification is the actual production of objects such as "abstractions, tools, symbols, stories, terms, and concepts (pg. 59) that reify something from the CoPs practice (Wenger, 1998). As teachers in the present study integrate new literacy standards, the CoP may engage in reification on multiple levels as they develop a shared sense making and shared practice to integrate the CCSS (Wenger, 1998). Over time and as CoPs integrate CCSS into their practice, participation and reification can help members to both remember and forget past practice.

Reification also is demonstrated in current research on teacher communities. The production of common language and symbols shared by teachers in CoPs helps reduce ambiguity and create common understanding among teachers (Wood, 2007). Research also has shown how

the language and material artifacts of COPs help construct professional practice, and relationships (Warren-Little, 2002). The final element of Wenger's (1998) description of CoPs is identity that is discussed in the upcoming section.

This concept of practice also was shaped by a combination of research from Cochran-Smith and Lytle (1999); McLaughin and Talbert (1994); and Printy (2008). These researchers demonstrated that COPs influence teachers' shared technical culture and pedagogical competence. Talbert and McLaughlin (1994) defined technical culture as "shared standards for curriculum, subject instruction, relations with students, and school goals" (p. 134). Printy conceptualized pedagogical competence as teachers' perceptions of being able to accomplish tasks that also can be viewed as self-efficacy. These perceptions of self-efficacy included teachers and their shared sense of accountability for helping students learn (Printy, 2008). These studies also considered how teacher CoPs affected shared technical culture and pedagogical competence, finding that CoPs have an influence on teacher learning.

The "knowledge-of-practice" description of teacher learning also was integrated into the definition of practice. Knowledge in this description was considered constructing knowledge as a "pedagogic act." The concept of knowledge-of-practice was how experienced and novice teachers enacted their knowledge collectively to "make judgments, theorize practice, and connect their efforts to larger intellectual, social, and political issues as well as the work of other teachers, researchers, and communities" (p. 273). This concept did not require an already defined knowledge base that teachers were expected to learn and master, but they could construct the knowledge as they made decisions about pedagogy when contending with their learning about the CCSS. As teachers began working with the CCSS, they inevitably compared new standards to their current curriculum and posed problems related to their current practice, students, other

communities, and resources. Through this process, teachers learned as they solved problems (Cochran-Smith & Lytle, 1999). Shared technical competence also included measures of teachers beliefs about helping students learn.

Identity

This research also sought to understand how formal and informal CoP participation influenced teachers' identity. In Wenger's work, identity was another element of practice. The identity formation in CoPs developed as participation and reification evolved over time. Identity could be thought of as a layering of participation, reification, and negotiation of sense making, as well as the ongoing process of social interpretation (Wenger, 1998). Wenger defines identity as a social process of "becoming… a certain person" (p 215). Identity can be shaped by the level of participation teachers have with CoPs. Teachers may consider themselves core, active or peripheral members of CoPs. Members who are new to the community may engage in "legitimate peripheral participation" (p. 11) as part of their identity. Levels of participation may change throughout the span of a teacher's career.

The literature included several examples of how CoPs influenced teacher identity. Teachers' commitment to CoP participation may strengthen as teacher practice evolves in communities (Louis, Kruse, & Bryk, 1995). CoP participation could shape teacher's attitudes and beliefs about continuous improvement, develop a widely shared vision, and sense of purpose. Teachers who participate in CoPs may also have more positive attitudes toward schools, students and change (Boyd & Hord, 1994). Further, CoP could help develop a strong sense of efficacy which has been shown to exist in teachers who adopt new classroom behaviors as a result of CoP participation (Rosenholtz, 1989). When teachers identified with CoP members in which learning was situated they were more likely to change their practice (Coburn, 2001).

Measures of identity for this study included beliefs that teachers hold based on their level of job satisfaction, beliefs about their purpose, sense of mission, and shared values. The interviews also posed questions about formal and informal CoP participation and how it influenced identity.

Summary of Cop Participation and Teacher Learning Variables

One purpose of this study is to examine how formal and informal CoP participation influences teacher learning. CoPs exist in nested environments in school organizations which may influence teacher learning through participation and interactions among communities (Odper & Pedder 2011). Teachers can belong to a variety of formal CoPs including school wide, department, and course level CoPs that may influence their learning. Teachers also may voluntarily belong to informal CoPs that also can influence their learning.

Teacher learning is a complex concept to define. Wenger has developed a social theory of learning (CoPs) which was used in combination with research to establish the definition of teacher learning under study in this present research. Teacher learning is a combination of sense making, shared practice, and identity. Figure 2.3 is a model of the relationship among the three variables. Table 2.1 shows a summary of the teacher learning variables and their definitions.
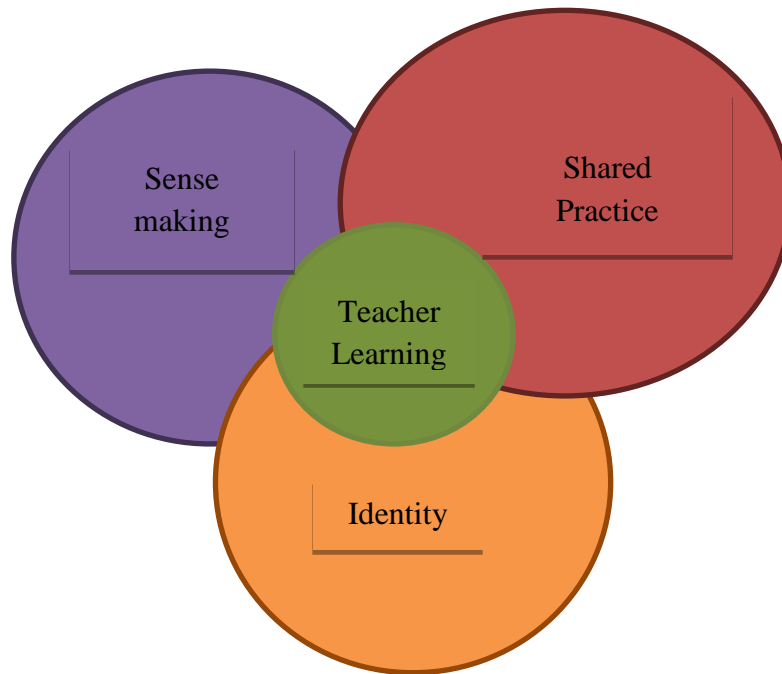
Figure 2.3 Teacher Learning in CoPs

Administrators and CoPs

In the past 20 years, research has increased on the role that administrators played in teacher CoPs (Coburn, 2001; Printy, 2008; Stein & Nelson, 2003; Young, 2006). The research described the roles that administrators played to support teacher learning in CoPs. Key findings of their research were that leaders could utilize a variety of behaviors to influence and/or facilitate teacher learning. In addition, research revealed more about the role that administrators played as they worked with teacher CoPs. Specific activities of formal administrators, such as high school principals and assistant principals, could enhance the learning and practice of teacher CoPs. These activities fall into four general categories: goal setting, instructional expertise, collaboration, and accountability. The next sections define each of the roles.

High School Principals and Assistant Principals

As some research was conducted to study leadership and CoPs, a paucity of research had been published to describe the role of high school principals and assistant principals in facilitating teacher learning. High school administrators encounter problems trying to balance demands of setting a vision to move the school toward a common goal, while battling "deeply entrenched departmental divisions" (Siskin, p 604). Some studies included leadership (department heads, assistant principals, and principals) as components of the research (Printy, 2008). Other studies used information from the school "leaders" that included consultants, department heads, and teachers that other teachers identified as leaders (Cobb et. al. 2003; Coburn, 2001; Stein & Nelson, 2003; Young, 2006). One study used the principal as the main source of information for the research (Coburn, 2005) and included data from teachers who worked with the school principal. Using high school principals and assistant principals as the administrators under study in this research allowed this research to resonate with other practicing high school administrators. In addition, using high school principals and assistant principals added complexity to the study as these administrators often are faced with unique challenges due to the demands of their position, size of the school organization, and specific accountability demands. High schools are under examined in CoPs literature.

Goal Setting

Most of the literature on leadership and teacher CoPs included a variation of the school leader practice of "goal setting." In orientating themselves as goal setters, leaders selected policy messages to communicate to teachers and established specific expectations or goals for teachers' work (Printy, 2008). Leaders also choose how to shape policy messages from the federal, state and district level. In shaping policy messages in certain ways, leaders were determining the

learning that would take place in CoPs (Coburn, 2008; Young, 2006). Research also indicated which goals that leaders wanted teachers to pursue in CoPs. Young (2006) suggested that the primary function of administrators was agenda setters, but maintained that using data should be their main emphasis. Other research showed that student learning should be the focus of teacher CPs. The literature on designed (formalized) CoPs arrangements claimed that to improve student learning, communities of practice should concentrate on the continuing intellectual development of the teachers in learning their subject matter (Grossman, 2001; Wells & Fuen, 2008).

The practice of goal setting also was described in recent literature on leadership effects on student achievement (Whalstrom, & Seashore Louis, 2008). Day et al. (2010) found that administrators were the center of leadership in schools. As the center of leadership, leaders placed students' needs above all others, setting a direction for the school and selecting strategies to improve student achievement.

As a goal setter, the school leader is able to set goals clearly and communicate those goals to staff members (Robinson, Llyod & Rowe 2008). School leaders oriented themselves as visionaries who established goals for the school and students based on concrete, best-practice evidence taken from their own organization and from their examination of surrounding environments (district, state, and federal; Odfer & Pedder, 2011). In serving as a goal setter, school leaders understood that their actions, beliefs, and values were models for the staff and students and should guide both groups as they work to make gains in their learning. Leaders, as goal setters, also were mindful of the congruence and timing of goals in relation to messages being sent to teachers by other sources, such as the school district, state, and federal governments. When the administrators' messages and those of other sources were not congruent, the staff would focus on the incongruence instead of the messages, which could have negative

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effects on their work (Coburn, 2005; Young, 2006). Finally, school leaders in their roles as goal setters worked to generate understanding and consensus among staff members regarding goals for the school and various paths to accomplishing goals.

Instructional Leadership

Administrators need to be able to act as experts in instruction to develop teacher learning in CoPs. Instructional leaders should understand the needs of individual teachers and groups (Printy, 2008). To be effective in structuring teacher learning, administrators need to focus teachers' attention on instructional matters and scaffold teachers' learning around instructional matters. Instructional leaders design tasks that can lead to teacher learning in CoPs (Stein & Nelson, 2003). Young (2006) found that leaders played key roles in sending messages about appropriate norm setting practices that could buffer or encourage teachers to integrate aspects of reforms into their learning. These aspects include: dealing with data reporting, interpreting data and teaching teachers about data, and furnishing instructional resources linked to issues arising from data analysis. As instructional leaders, administrators focus on student achievement. They encourage teachers to try new strategies and interventions to help students learn and understand best educational practices (Wells & Fuen, 2008).

Stein and Nelson (2003) also found that administrators need some knowledge of content to influence teacher learning in CoPs. They suggest that administrators need extensive knowledge of at least one content area in order to be effective instructional leaders. When administrators need to learn about other subjects they do so through what the researchers termed as "post holing" (p 423). Post holing is a way for administrators to gain deep knowledge about content areas through learning about how subjects are learned and taught. Instructional leaders should possess "leadership content knowledge" (p. 424). Through a cross case analysis the

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researchers showed that leaders at all levels of the school organization need knowledge about how subjects are taught and learned. Administrators may gain this knowledge through networks of colleagues and resources that will help develop the necessary content knowledge.

Administrators who act as instructional leaders focused on instruction in ways that indirectly affect student achievement. Robinson, Llyod and Rowe (2008) found that instructional leaders in high performing schools focused on teaching and learning, acted as instructional resources for staff members, and were active participants in and often led teacher professional development. Day et al., (2010) showed that successful instructional leaders could enrich curriculum and enhance the quality of teaching and learning. These leaders also focused on developing strategies that allowed all students to access the curriculum in different ways, with a focus on personalized learning. Printy (2008) established that instructional leaders prioritized instruction, gained knowledge of reality of instructional practices in the school, and kept teachers focused on instruction. Instructional leaders used knowledge of teachers' individual abilities, strengths, and weaknesses to personalize learning. Instructional leaders modeled their learning to influence instructional practice among teachers. They were able to scaffold teachers' learning so they could gain skills and capacity both individually and collectively. This scaffolding led to the development of instructional practice and teachers' content knowledge improvement that is necessary in subject areas. These administrators also understood group and social dynamics of teachers and structured encounters and learning opportunities among groups, which may lead to increased teacher learning (Printy, 2008).

Using a case study approach, Printy, Marks, and Bowers (2009) described instructional leaders with the partnering of transformational leadership to develop a model of integrated leadership. The researchers found that when principals share instructional leadership with

teachers, both parties influence assessment, curriculum, and instruction. The influence of

teachers may establish norms of interaction that "creates a common culture inviting teacher

leaders to step forward" (p. 510). The researchers described the importance of both principal and

teacher leadership in "establishing the kinds of relationships that are conducive to improving

instructional quality and creating conditions that support academic progress of all students" (p.

529). This research established an important connection describing mutuality between principal

and teacher instructional leadership.

Collaboration

When leaders supported teacher participation in CoPs, they also demonstrated abilities to

encourage teacher learning. Leaders who shared instructional values, a common focus on student

learning (including assessment), collaboration in the development of curriculum and instruction,

and purposeful sharing of practices helped foster collaboration. Leadership that strengthened

professional community led to the use of instructional practices that increased student

achievement (Day et al., 2010; Whalstrom & Seashore Louis, 2008).

Research has shown that one way leaders influence collaboration is by structuring

available time into the organization, which allows teachers to meet and collaborate (Coburn,

2008; Wells & Fuen, 2008; Young, 2006). Historically, research has shown that teachers worked

in isolation and did not collaborate often (Little, 1992; Lortie, 1975). Leaders who wished to

foster collaboration among teacher CoPs possess an understanding that not all teachers will be

comfortable learning together. To help establish effective collaboration, leaders help break

patterns of teacher isolation and privacy by establishing patterns of collaboration (Wells & Fuen,

2008). Leaders may foster creating and maintaining norms of interaction among teachers that can

facilitate collaboration as teachers work together (Young, 2006). In his quantitative research on

elementary school principals, Weathers (2011) found that "school leadership is an important predictor of teachers' sense of community" (p. 27). He asserted that the actual actions of the principals did not foster norms of collaboration; instead teacher perceptions of the leaders' actions had an effect on teachers' sense of community. Weathers suggested that when principals recognize achievements and communicate expectations for teacher behavior around instructional issues, they act in ways that cultivate school culture and teachers' sense of community. As a result of their research, Stein and Nelson (2003) suggested that administrators could foster teacher learning in CoPs by scheduling classes in a way that could allow for common planning and by obtaining substitute teachers to allow teachers to collaborate away from their classrooms.

Printy (2008) showed that when administrators created conditions for productive teacher conversations, translation and alignment of sense making might take shape across CoPs. To foster collaboration, leaders structured joint work with activities that could move teacher learning forward and influence instructional practice. Leaders could also create the "right mix" of professionals in communities to encourage teachers to try reform-minded strategies resulting from CoP participation (Printy, 2008).

Accountability

Another role that administrators could play to encourage teacher learning in CoPs was to hold teachers and CoPs accountable for working toward the goals of the organization. Printy (2008) named this function "learning motivator" (p. 199). As learning motivators, administrators held teachers accountable for results, which tightened the connections between policy and practice. Administrators found a balance between incentives and sanctions in the organization that encouraged individual and CoP teacher learning (Stein & Nelson, 2003). Young (2006) also asserted accountability was increased in the organization when administrators requested that

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teachers analyze data and then followed up to ensure that teachers were changing instruction based on their data analysis,

School districts that set standards above those set by the state, in terms of curriculum standards, interventions, and improvement strategies, were consistently ranked as high-performing. District leadership in high-performing districts had high expectations for administrator leadership, provided learning experiences and opportunities in line with their expectations, and followed up with monitoring and intervention to support administrator leadership development (Whalstrom, & Seashore Louis, 2008). The leaders' ability to monitor and evaluate teaching and the curriculum influenced student learning (Marzano, Walters & McNulty, 2005; (Robinson, Llyod & Rowe 2008). Leaders in high performing schools influenced student outcomes and improvements in school conditions, including placing an emphasis on raising academic standards, providing assessments for learning, monitoring of student and school performance, and ensuring coherence of teaching programs (Day et. al, 2010).

Summary

This chapter demonstrated how CoP participation influenced teacher learning. Teacher sense making, shared practice, and identity may be influenced through CoP participation. Teachers learn in combinations of formal and informal CoPs. CoP participation varies as mutual engagement, joint enterprise, and shared repertoire of communities differ.

Administrators, who set clear goals, find time for teachers to collaborate, and work toward achieving the goals are acting as instructional experts. They hold teachers accountable for making progress toward goals and may influence teacher learning in CoPs. The next chapter is details the methodology used in the present research.

CHAPTER 3

Methodology

Rationale for Case Study Methodology

Researchers are aware that there could be "multiple interpretations of a single event" (Cohen, L., Manion, L., Morrison, K., 2007, p. 21), and that research could represent situations through the eyes of the participants as an interpretive practice (Cohen et al.). Using a qualitative research methodology for this study was an opportunity to understand and interpret the actions of teachers, principals, and assistant principals according to their viewpoints about teacher learning and communities of practice (CoPs) to address the research questions.

This study used a qualitative case study research design, involving five teachers from two high schools and one principal and assistant principal from each high school. "A case study is both the process of learning about the case and the product of our learning" (Stake, 1998, p. 87). The intent was that the case study method allowed the study to provide findings that could complement and enhance research on teacher CoPs.

Case study methods often were used when a researcher wished to develop in-depth understanding of the answers to the research questions. Each research question asked in this study required the researcher to describe and understand the complexities of the data gathered and analyzed fully. This in-depth level understanding of teacher learning and leadership practice allowed for complex descriptions of the study findings.

Sampling and Site Selection

The study examined high school teachers, COPs, high school principals, and assistant principals as they made sense of and implemented common core state standards (CCSS). I am employed in a school district with three large high schools in suburban Michigan. The district

began implementing the CCSS beginning in the 2012-2013 school year. I had immediate access to conduct my research in the two other high schools in the school district where I work. The high school at which I work was not used in the study. I communicated with the Assistant Superintendent of Instruction in the school district who gave permission for two high schools to be research sites in this study. I communicated with the principals of both high schools to determine that they would allow me to include them, their teachers, and one assistant principal in the study. After gaining permission from the principal, I then asked for help identifying teachers who would be willing to participate in the study.

The district in which the research was conducted was implementing a new structure of teacher leadership to lead the common core implementation. This structure included one subject area curriculum consultant who was a part time teacher and part time released for common core duties. The structure also included two subject area teacher leaders in each high school to assist with the implementation of the CCSS. Ideally, the district curriculum consultant and at least one social studies teacher leader would participate in the study. Recommendations for teachers to participate in the study came from the principal at each high school.

This study was limited to high school social studies teachers. The general description provided to principals was the teachers should have more than three years and less than seven years of teaching experience. This range of years of experience was designed to limit the amount of comparisons between past principals and their leadership practices that teachers with more years of experience might have. Each of the principals emailed me the names of the teachers that I could contact. I explained the study to the identified teachers and determined if they willingness to participate in the study. Three social studies teachers from each school were available to participate in the study. The decision to eliminate one potential participant was made because

his/her range of experience exceeded the three to seven years criteria set for the study. Assistant principals were selected based on their work with the social studies department. One assistant principal from each high school was included in the study after I made contact with them, explained the study and asked them to participate.

Data Collection

After participants were identified, an initial semi-structured interview was conducted (Appendix B). Initial interviews took place mid school year in 2012. This interview established basic participant information (e.g., number of years teaching, history of teaching career, helped identify preferred learning styles of the teachers, and the formal and informal COP the teacher learned in and for what purposes). One of the goals for the first interview with the teachers was to establish a relationship with the participants so they would be comfortable with me in an interview setting. Participants were ensured through the consent process that their data would not be shared with anyone. Because I work in the school district, I wanted to make participants comfortable with me and understand that interview data were confidential.

A second interview was scheduled with each teacher later in the school year. The second structured interview (Appendix C) provided specific information about activities aligned with the CCSS implementation, how the teachers felt their learning was progressing. The interviews also provided insights about the role that principals and assistant principals played in teacher learning in COPs.

Administrators also were interviewed mid school year in 2012 (Appendix C). The main purpose of these interviews was to understand how principals and assistant principals thought about teacher learning in general and the role they played in facilitating teacher learning in COP. A second interview with each principal and assistant principal established their perspectives on

teacher learning regarding the CCSS and the role they played in facilitating teacher learning in COP.

Though the interviews were set up as semi-structured interviews where questions were developed ahead of time, allowances were made for follow up or additional questions as the interviews unfolded. This was an opportunity to engage Schwandt's (1997) stance that an interview is "…a form of discourse between two or more speakers or as a linguistic event in which the sense makings of questions and responses are contextually grounded and jointly constructed by interviewer and respondent" (p. 79). Table 3.1 is a representation of what research question each interview question would help answer.

Table 3.1 *Interview Questions and Research Question Cross Reference*

Interview Question	Research Question
Teacher Interview 1: When you want to learn something do you usually work with a COP or individually? What is your overall philosophy of how you prefer to learn? Does your preference change based on what you are trying to learn?	Research questions 1-3
Teacher Interview 1: What formal and informal COP do you learn in?	Research questions 1-3
Teacher Interview 1: Think about a time you were asked to implement something new as a teacher, what COP did you work with to accomplish what was being asked of you and how did each of these groups add or detract from your learning?	Research questions 1-3

Table 3.1 (cont'd)

Interview Question	Research Question
Teacher Interview 1: What CoP do you do most of your learning about the following practices of a teacher: discussing curriculum, discussing and evaluating instruction, and discussion of student learning?	Research questions 1-3
Teacher Interview 1: When you think about the times you learn in a CoP, what roles did the principal or assistant principal play to influence your learning?	Research question 4
Teacher Interview 1: What role does your principal and assistant principal play to influence your learning about curriculum, instruction, and student learning?	Research question 4
Teacher Interview 2: What activities have taken place so far this school year to help you learn more about the CCSS? What CoP are you working with to learn about the CCSS? What activities is each of these communities engaged in to learn more about and implement the CCSS? How do you prefer to learn about and implement the CCSS?	Research questions 1-3
Teacher Interview 2: How do you feel about your ability to integrate the CCSS into your current curriculum? What are some challenges you might face? What do you perceive may be challenges that the social studies department and grade subject level groups in the department might face as the CCSS is implemented? Since this study looks specifically at the social studies department, tell me a little about how you perceive the social studies department and their grade level/content break downs in general will handle changes that the CCSS might bring?	Research questions 1-3

Table 3.1 (cont'd)

Interview Question	Research Question
Teacher Interview 2: What role does the principal and assistant principals play in influencing your learning in both CoP and other groups?	Research questions 1-3
Administrator Interview 1: What CoP do you think teachers learn in and for what purposes?	Research questions 1-3
Administrator Interview 1: What role do you believe leaders play in influencing teacher learning both overall and when teachers learn in CoPs?	Research question 4
In your experience, what formal and informal COP do you think high school teachers learn in? How do you think about facilitating teacher learning with these CoPs in mind? Given the COP that you mentioned, what role do you think you play in influencing teacher learning? Overall, how do you think about teacher learning? For example, do you believe it is an individual or social activity? If I were to ask the teachers what role the principals and assistant principals play in their learning in COP what do you think they would say?	Research questions 1-4
Administrator Interview 2: Describe your understanding of the plan for teachers to learn about the CCSS.	Research question 4
What learning about the CCSS do you think teachers will do an in what CoP do you think they will learn certain things in? What CoP do you think teachers already belong do where they will learn about the CCSS? Do you believe any new CoP might form to help teachers learn about and make sense of the CCSS?	Research question 4

Table 3.1 (cont'd)

Interview Question	Research Question
Administrator Interview 2 (cont'd): What do you think will be the biggest challenges teachers encounter when implementing the CCSS?	Research question 1-3
What do you perceive to be challenges that the social studies departments and grade/subject levels groups might face as they implement the CCSS?	Research questions 1-3
If I were to ask social studies teachers what role the principal and assistant principals play in influencing their learning in both CoP and individually in regard to the CCSS what do you think they would say?	Research question 4

Data Analysis

Data analysis is a "means of organizing and interrogating data in ways that allow researchers to see patterns, identify themes, discover relationships, develop explanations, make interpretations…or generate theories" (Hatch, 2002, p. 148). As suggested by Hatch, data analysis begins to take place shortly after the study has begun (2002). This allowed the researcher to tailor future interview questions and observation settings toward themes emerging as the data were being collected.

Fontana and Frey (2000) described interviewing as "active interactions between two people, leading to negotiated, contextually based results" (p. 646). Denzin (1993) believed that with interviews, qualitative researchers understand that "qualitative research text consists of three forms of discourse: ordinary talk and speech, inscriptions of that speech in the form of transcriptions, and written interpretations based on talk and its inscriptions (p. 314). In this research, at least three levels of sense making were occurring when interviewing the participants.

First, the teachers and the interviewer used dialogue with each other that made sense making of the topics based on their knowledge, understanding of the context, and any shared or new interpretations that rose out of the juxtaposition of these issues. Then the researcher analyzed the audio recordings of those interviews and transcribed the interviews while making sense of the interview during this process. Finally the researcher made interpretations and wrote those interpretations based on recollections of the interviews and the transcriptions. In these ways, each interview went through multiple levels of interpretation before the data were presented in the study.

Member checking was an important part of the research design. Member checking may also be a means of data analysis as teacher and leader participants helped make sense of the observations and interviews. The researcher would member check transcriptions of the interviews with participants.

After member checking was completed, the interview data were organized through a coding procedure. Essentially the transcripts were read through, coded, and categorized to find common themes and patterns in participant responses. The data were also organized under each research question to address each question. Along with organizing data to address each research question, the data were organized under the teacher learning, leadership role, and type of teacher learning categories to determine if any further themes, patterns, or substantial differences emerged. The coding system was developed to capture the complexity of addressing both the actual research question and then layering in the rich descriptions that each participant provided. The researcher used five categories initially to address research questions. Those categories were:

1. Individual learning preference

2. CoP learning preference

3. Both individual and CoP learning preferences

4. Designed CoP

5. Emergent CoPs

Examples of these five coding categories are shown in Table 3.2.

Table 3.2 *Examples of Coding Categories for Teacher Learning preference and CoP Type*

Learning Preference and Community Type Coding Categories	Example Response
Individual learning preference	*Typically individually. I do better at least at first on my own. I don't mind sharing ideas with others but I find if I am thrown into a group sometimes I lose kind of my own ideas. If I see an example first I am not as good at coming up with my own creative ideas to do things. So like to learn individually.*
CoP learning preference	*…and we still get together and review things that did not go well in previous years and share different ways that we change a similar lesson to fit our class to help improve other teachers instruction.*
Both individual and CoP learning preferences	*I am going to say both…so I think it is good to learn from other people…good to reflect individually by yourself.*
Formal CoP	*Formal would be my department and I have been taking some classes.*
Informal CoP	*Informal groups that we see are the buddy system things with one or two teachers where we sit down at lunch.*

Within each answer participants spoke about a wide variety of reasons they preferred

individual, COP, or both styles of learning. Participants described informal and formal CoP

participation and how it influenced their learning. Teachers also described CoPs they participated

in which influenced implementation and learning about the CCSS. These answers were further

categorized based on the definitions of teacher learning established in the literature review.

Coding was developed for the three aspects of teacher learning based on the categories on the left

side of the table.

Table 3.3 *Coding Categories for Teacher Learning*

Teacher Learning Coding	Example Response
Sense Making	*"Teachers are uneasy about leaving the model of cover every benchmark and cram everything in to go towards a model of deep thinking and understanding, which inherently takes more time."*
Shared Practice	*"The question is how can you get into the everyday practice of kids looking for evidence which seems to be the biggest part of common core"*
Shared Practice	*"… we already do this part for common core but we don't do this so we have to make sure we are encompassing this in our lessons…"*
Shared Practice	*"So common core is going to be asking what of us? ok we already do a ton of document analysis. Ok, perspectives, pulling other resources. Where else can we go…what are we doing and seeing how can just up the ante…where are our kids lacking? So pre-test, post-test, on those strategies every semester…"*
Shared Practice	*"…so before every unit we had collaborated on units a couple of years ago, and we still get together and meet and review things that did go well in previous years and share different ways that we change a similar lesson to fit out class to help improve other teachers instruction."*
Identity	*"I really like working with that subject area a lot…"*
Identity	*"It's no hard feelings. If it is your lesson it is not a personal thing."*
Identity	*"…we really try and push ourselves…"…"; "Our curriculum is awesome."*
Identity	*" I am really proud of it*

After teacher learning data was coded for both type of community and influence on teacher learning a picture of teacher practice in COPs began to take shape. There was a difference between the two research sites in two communities in particular (Burt buddy teachers and Spartan US History COP) which led to the decision to write the data analysis distinguishing the research sites from one another.

The fourth research question addressed the influence administrators have on teacher learning in COPs. The principal and assistant principals' data to answer research question 4 were coded under the four leadership roles described in the literature review:

- Goal setting

- Instructional leadership

- Collaboration

- Accountability

Examples of these four leadership role coding categories are shown in Table 1.4.

Table 3.4 Coding Categories for Administrators

Leadership Role	Example Response
Goal setting	"…it is generally the principals' ideas that are guiding the way we are going with things…"
Instructional Leadership	"…they do a good job of guiding the thought process and the learning process…"
Collaboration	"I would say that they really foster a collaborative group…"
Accountability	"…if we are going to have principals come in and evaluate us…"

Data on administrator was also separated between principals and assistant principals to determine if there was a commonality or difference between the two roles and the four administrator participants.

Timeline

The research would be conducted during the 2012-2013 school year. Permission was granted from the school district in early fall, 2012. IRB approval was granted shortly thereafter pending appropriate documentation from the school district. Interviews were conducted throughout the school year and transcription was completed after each interview. After transcripts were complete they were sent through email to each individual participant for their review. Participants were asked to respond within 5 days if they believed any part of their interview transcripts were inaccurate or wanted portions withheld. Only one participant responding wanting interview data withheld. The data would not have been used in the study anyway as it specifically referenced the personal situation of a particular teacher.

Ethical Considerations

Ethical considerations were composed of "topics of informed consent, right to privacy, and protection from harm (Fontana & Frey, 2000). Informed consent (Appendix A) would be obtained from each participant who is included in the study. Protection from harm was another ethical issue. If the portrait of the participants is "negative" (which will be subjective based on the reader) then the researcher risked harming the careers of those under study. Any and all ethical considerations that may arise during the study were handled with professionalism and care. The researcher would also obtain a statement of support as required by Michigan State's Universities Internal Review Board (IRB) from each high school which showed that the schools

understood the nature of the research was not for personal or financial gain, and all data collected was done in the spirit of confidentiality.

Summary

Though qualitative studies are not generalizable to the wider population, the purpose of this study is to paint an empirical picture of what takes place among high school teachers, principals and assistant principals. Data from this study might be used to develop further inquiry into teacher learning in a more statistically significant way. The study also uses high school teacher, principal, and assistant principal data which is not commonly found among other teacher community research.

CHAPTER 4

Descriptive Findings

Introduction

Theories of social learning promote beliefs that learning evolves through social interactions. Social interactions take place as teachers participate in communities of practice (CoPs). Practice in CoPs emerges through interplay between joint enterprise, mutual engagement, and shared repertoire (Wenger, 1998). In school organizations, learning also develops in nested teaching and learning environments (Opfer & Pedder, 2011). Different CoP memberships, enterprises, and repertoires may influence the learning of teachers, groups, and collectives reciprocally across these nested layers.

One purpose of this research is to examine how participation in designed and emergent CoPs influences teacher learning. Wenger et al. (2002) wrote:

> Communities of practice are a natural part of organizational life. They will develop on their own and many will flourish…Their health depends primarily on the voluntary engagement of their members and on the emergence of internal leadership. Moreover, their ability to steward knowledge as a living process depends on some measures of informality and autonomy. Once designated as the keepers of expertise, communities should not be second-guessed or over managed. (p. 12)

Communities that are a natural part of school life are emergent CoPs. In emergent CoPs, teachers construct knowledge through social interactions as lived experiences. These social interactions among community members guide joint enterprise, mutual engagement, and shared repertoire (Coburn 2001; Printy, 2008). Participation happens through voluntary engagement in a variety of locations, with teachers' joint work mutually defined by community members. Leadership comes from within the community and may change over time (Wenger, 1998). Emergent teacher CoPs (e.g., buddy teacher partnerships, U.S. history teachers at Spartan, online groups) under study in the present research are CoPs where membership is voluntary, joint

enterprise of the community has been shaped over time, and direction for teacher learning and development of shared repertoire is established.

Teachers also interact in many structured groups, which may be perceived as designed CoPs. These CoPs are purposefully designed groups, with well-defined membership, and attendance policies often are mandatory. Leadership in designed CoPs often is someone with a formal designation as a leader. Meeting agendas steer the enterprise of the community during set times and in set spaces (Coburn, 2001; Printy 2008). Schools often use professional learning communities and professional development activities for teacher learning in designed CoPs. Social interactions between members in these settings also can guide mutual engagement, joint enterprise, and shared repertoire.

A criticism of research on teacher learning in CoPs is that researchers have used simple conceptualizations of learning, leading to conclusions that many learning opportunities for teachers are ineffective (Opfer & Pedder, 2011). Thus, the conceptual model guiding this research viewed teacher learning as comprised of three aspects: sense making, shared practice, and identity across multiple, nested CoP contexts. Examining both designed and emergent COP participation provides a rich description of the geography of teacher learning and contributes to what researchers and practitioners know about CoPs. The first three research questions that guided this study were:

1. How do designed and emergent communities of practice influence high school teachers' sense making?

2. How do designed and emergent communities of practice influence high school teachers' shared practice?

3. How do designed and emergent communities of practice influence high school

    teachers' identity?

Geography of Learning and Practice

A narrative describing teacher learning across both designed and emergent CoPs offers a

more nuanced geography of teacher learning than provided by much of the existing research.

Wenger (1998) described the "geography of practice" (p 130) that included how "proximity and

distance can facilitate or hinder teacher learning" in CoPs. Existing CoPs, such as ongoing

school, department, and course level gatherings, interact with each other through the nested

nature of the school organization.

To understand the geography of practice in the schools studied, it was necessary to be

aware of the designed and emergent CoPs in which teachers participated and how their

participation influenced their learning. Two suburban high schools in the same district, each with

about 1500 students and 80 teachers were research sites for this study. Here, the schools are

named Burt and Spartan. During the 2012-2013 school year, social studies teachers in both

schools engaged in learning and implementing the common core state standards (CCSS). The

CCSS introduced literacy standards into social studies curricula. As this study took place,

teachers began considering ways in which they could incorporate the literacy standards into

curriculum. Teacher learning topics often included reading strategies for use with students who

were analyzing primary documents; understanding evidence; as well as forming and supporting

arguments through writing, speaking, and multimedia presentations. This context provided an

opportunity to examine the influence of designed and emergent CoP participation on teacher

learning.

Understanding the geography of practice included studying how teacher learning in CoPs developed through mutual engagement, joint enterprise, and shared repertoire. According to Wenger (1998), mutual engagement occurs as members of communities interact, define relationships between themselves and those outside the community, and establish norms. Mutual engagement encompasses knowledge of roles that members enact in CoPs, who possesses expertise, and who can be trusted to carry out tasks. Joint enterprise is the understanding that members share regarding the purpose of the community and includes keeping learning at the forefront of the community to accomplish goals (Wenger, 2007). Shared repertoire of a CoP is embodied in the language, tools, artifacts, concepts, and history used as the community develops its practice (Wenger, 2007). Each community may have differing influences on the practice of teachers participating in designed and emergent CoPs.

The first interview with each participant provided general data about designed and emergent CoPs in which he or she participated. Teachers described multiple designed and emergent CoPs that influenced their learning. Their responses provided a general description of their geography of practice. The second interviews provided specific information on teacher learning regarding and implementing the CCSS through CoP participation. As teachers described CoPs in which they participated to implement the CCSS, an understanding of the relationships between CoPs, members of the school organization, and members inside the communities emerged.

Participation in Designed District Level CoPs

Several participants in this study recognized designed CoPs in which they were member's facilitated learning about the CCSS. Designed CoP participation was defined as CoPs where membership was distinct, meeting times and locations were set in advance, formal leadership

roles were established, and the joint enterprise of the CoP was structured by set agenda. Figure 4.1 demonstrates designed CoPs identified by participants in this study in which teachers learning about the CCSS took place.

DISTRICT		District Wide Social Studies Teachers	Teacher Leaders
	SCHOOL	School Wide Faculty	
		DEPARTMENT	Social Studies Department
			Course Groups
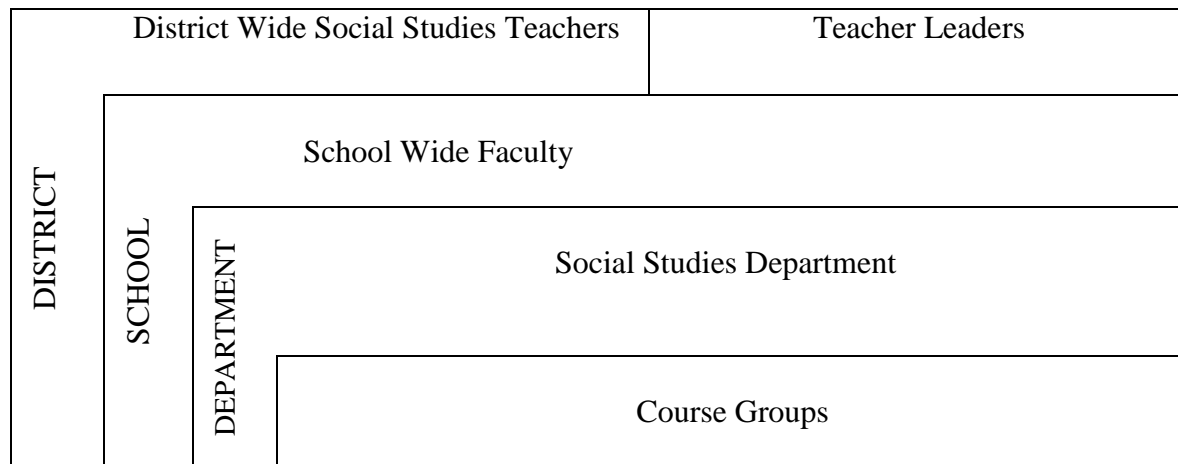
Figure 4.1 Designed CoPs

Table 4.1 Provides information on the participants names used for this study, their roles, and what school they are from.

Table 4.1 *Participants*

Participant name used in study	Role	School
David	Teacher, Social Studies Consultant	Burt
Claire	Teacher	Burt
Kate	Teacher	Burt
AJ	Teacher ,Teacher Leader	Spartan
Elise	Teacher	Spartan

The District Social Studies Department

During the school year in which this study took place, the school district designated a social studies curriculum consultant, David, to lead social studies teachers' learning about the CCSS. David is a teacher at Burt and a participant in this study. He was released from two teaching hours during the school year to facilitate teacher learning about and implementation of the CCSS. David worked with two designed CoPs in the school district to design and facilitate

teacher learning about the CCSS. One of the CoPs with which David worked was the district

social studies department, which is comprised of all high school social studies teachers in the

district. In years prior to the study, the joint enterprise of the community involved developing

and maintaining common assessments for each core social studies course. All members of the

department convened for general information affecting the department (for example, elimination

of a course offering) and then teachers from the three high schools would divide into course

groups.

The district course groups' purpose in prior school years was to examine student

performance outcomes and semester-end common assessments, as well as to make alterations to

assessment questions based on student performance. However, during the school year in which

this study took place, the district social studies department convened to begin learning about the

CCSS and how these standards may influence social studies pedagogy. To initially learn about

the CCSS, all social studies teachers attended several district-wide "event-based" (designed)

professional development (PD) sessions for secondary social studies teachers. These PD sessions

were facilitated by central office personnel and David. Learning activities at these sessions

included a general overview of the purpose of adopting the CCSS. Teachers were given copies of

the social studies literacy standards, discussed changes to social studies pedagogy, performed

assessment tasks, and learned about social studies literacy strategies. David also facilitated

several professional development half days during the school year, with all social studies

teachers in the school district learning jointly about the CCSS. Teachers examined sample social

studies assessment tasks from an assessment consortium connected to the CCSS. Kate stated:

"We've done different things at PD where they have passed out actual assessments … . And

we've actually worked through them so that's been helpful." The district social studies

department members completed assessment tasks, learned about specific literacy strategies (Close and Critical Reading and Question-Answer-Relationship [QAR]), and online resources to support teacher learning about the CCSS (for example, people, organizations and hashtags they might follow on Twitter to participate in social studies chats). In their descriptions of CoPs, teachers cited district PD sessions in which they learned about the CCSS. Elise stated: "across the district we have been working as a department to refine our curriculum, assessment, and unit plans to align with the common core state standards." AJ indicated that teachers across the district looked at the sample assessments and "discussed the types of skills and the way in which we as teachers need to approach the process of teaching these different skills and applying them." Toward the end of the school year when David's second interview was conducted, he stated that the district social studies department was "Using QAR when writing questions based [on] reading material…Implementing CCSS writing and performance assessments". Table 4.1 conveys teacher learning which took place in the district social studies department.

A Teacher Leaders Designed CoP

Another designed CoP in this study was comprised of the district social studies teacher leaders. David facilitated a group of teacher leaders to implement the CCSS. Teacher leaders existed in the district prior to the 2012-2013 school year. They were designated by course (the U. S. history teacher leader for example) and served as communication links between each high school and the teacher leader CoP. The main role of teacher leaders was to meet with other teacher leaders from the three high schools, design and disseminate common units of study in each course, develop and maintain common assessments, learn to interpret data from assessments, and help teachers make sense of student performance data on assessments in part by being "experts" on how to use the district's common assessment data system.

During the year this study took place, the teacher leader COP experienced changes both in joint enterprise, as learning centered on implementing the CCSS, and in mutual engagement, as membership and meeting frequency changed. Each high school in the district selected two social studies teachers (for a total of six) to assist David with planning professional development for district social studies department meetings and lead CCSS implementation in their schools. Teachers applied to be social studies teacher leaders, with the principals selecting two teacher leaders from each high school. Two participants in this study are teacher leaders, Kate and AJ. Kate was new to the role of teacher leader and AJ was a teacher leader in past years.

Table 4.2 *Teacher learning in the Designed District Social Studies CoP*

	Mutual Engagement	Joint Enterprise	Shared Repertoire
District Wide Social Studies Department	Set meeting dates, times, locations and agenda Formal leadership by curriculum consultant who had teachers read CCSS literacy standards, asked teachers to complete assessment tasks David chose literacy standards teachers learned about David communicated district vision for social studies standards adoption	Read CCSS social studies literacy standards Read and perform assessment items Learn Close and Critical and QAR reading strategies Discuss integration of literacy standards with students and primary source documents into curriculum	Develop QAR questions Develop CCSS writing and performance assessments Shared language develops as teachers learn about standards and literacy standards Shared understanding develops as teachers learn about CCSS assessments Provide websites and online resources to learn more about CCSS

Changes to the CoPs joint enterprise also occurred as teacher leaders learned about and discussed how to implement the CCSS. Teacher leaders disseminated information about the CCSS to the building-level social studies teachers and facilitated professional development at their schools to implement the CCSS. Teacher leaders communicated what they had learned in their meetings back to the social studies teachers in the schools in which they work. An example of this would be the teacher leaders learning about reading strategies as a group, and then individual teacher leaders communicating strategies to their peers.

Teacher leaders communicated between the schools in which they worked, the teacher leader CoP and David. There was no expectation that teacher leaders would communicate their work and learning with administration. The district-wide social studies department and teacher leader CoPs are designed CoPs in which teacher learning takes place. CoPs participation has varying influences on teacher practice. Table 4.2 summarizes the influence that participating in the teacher leader CoPs had on mutual engagement, joint enterprise, and shared repertoire.

Emergent CoPs

Participants from both high schools identified several emergent communities common to high school teachers that influenced their learning about the CCSS. This section provides a general over view of the emergent CoPs. Detailed descriptions of CoP participation for each school are included in the upcoming sections.

One emergent community identified by teachers was "buddy teachers," pairs of teachers who teach the same course. Another community identified was the U.S. history CoP at Spartan. Teachers also identified online CoPs in which they learn. Participants in these emergent CoPs are voluntary members. The practice of these communities is defined through the history of engagement the members establish as their practice emerges over time. Their joint enterprise is

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more organically defined and leadership emerges from within. Community members' movement

across core and peripheral membership and in and out of leadership roles in fluid

synchronization that meet each individual teacher's learning (Wenger, 1998).

Table 4.3 *Teacher learning in the Designed Teacher Leaders CoP*

	Mutual Engagement	Joint Enterprise	Shared Repertoire
Teacher Leaders	Set meeting dates, membership, times, locations and agenda Teacher leaders learn about CCSS literacy standards, literacy strategies and performance tasks Formal leadership by curriculum consultant who teaches literacy strategies to teacher leaders	Learn about the CCSS social studies literacy standards Learn close and critical reading and question-answer-relationship reading strategies so they can inform departments Plan district wide social studies department meetings Plan school department meetings to share CCSS information Some accountability to teach building social studies departments learning that occurred during teacher leader meetings	Development of shared understandings and language as they implement literacy standards Future plans for CCSS writing rubric

Teachers from Burt commonly cited teachers who teach the same courses, named buddy

teachers by one of the participants, as a CoP in which they learn. These CoPs are self-initiated

voluntary partnerships. Buddy teachers may be within the school, in another school or outside of

the school district. Several teachers in this study teach the only Advanced Placement (AP) course

offered in their school. These teachers cited buddy teachers in the other two high schools within

the district and in schools outside the district. Interview data demonstrated that teachers from

Burt learned with buddy teachers more often than teachers at Spartan.

Teachers now participate in online CoPs to meet a variety of needs. Teachers in this study

identify online CoPs in which they participate to get ideas for lesson plans, activities, shared

resources, and assessment strategies. Teachers also participated in online CoPs to learn more

about the CCSS standards and how other teachers are implementing them. AJ described

following people on Twitter who [have objected to implementation of the common core?] so he

can "get a good perspective of the issue." The curriculum consultant, David, spent time during a

districtwide social studies department meeting showing teachers various organizations and

people to follow on Twitter to learn more about the CCSS. In addition, Elise and AJ both

described using online CoPs to which they belong through memberships in professional

organizations, such as the College Board (for AP teachers), and Street Law. The U.S. history

CoP at Spartan has an online Moodle site where they post lesson plans, activities, assessments,

and resources for community member use. Figure 4.2 displays emergent CoPs which teachers

and administrators identified as influencing teacher learning about the CCSS.

Participants in this study are members of the CoPs identified in both Figures 4.1 and 4.2.

The upcoming sections explore the learning lives of the participants in greater detail, and their

memberships in a range of designed and emergent CoPs. Data from teachers are first presented

for Spartan High School, and then Burt High School. Each section begins with an introduction to

the teacher participants followed with a vignette to illustrate teacher learning in CoPs and

individual teacher learning preferences in that school. Following the teacher introductions and

vignettes are data on designed and emergent CoP participation and teacher learning.

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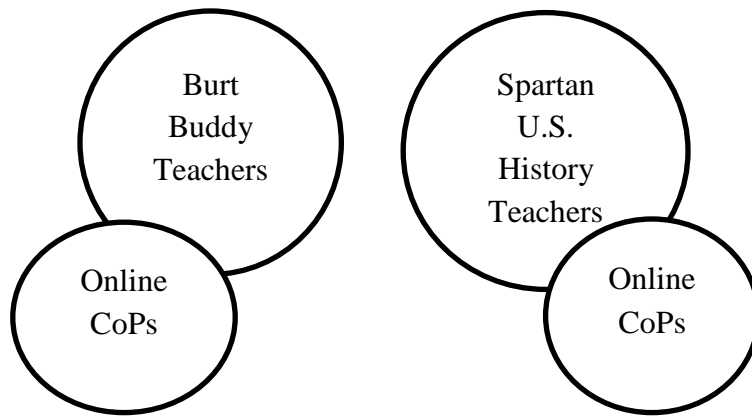
Figure 4.2 Emergent CoPs Teachers Participate in to Implement the CCSS

Spartan High School Teachers

As stated in Chapter 3, this study included both high school social studies teachers and administrators. Teachers were identified by the principal based on number of years teaching (between 3-7 years) and willingness to participate in the study. The Spartan High School principal identified three possible teachers to participate in this study. One of the identified teachers did not meet the number of years of experience criteria and was not included in the study. The teachers from Spartan are named Elise and AJ in this study. At the time of the study Elise was in her sixth year of teaching overall and her third year of teaching at Spartan. Elise teaches AP courses and general courses including U.S. history. Elise recently completed her master's degree in teaching and curriculum in a global context. AJ has been teaching social studies for six years at Spartan. Like Elise, AJ teaches AP courses and general courses in the social studies department including U.S. history. AJ has been a teacher leader for the Spartan Social Studies Department for several years including the year this study took place. AJ has also been an athletic coach at Spartan for the past five years. He completed his master's course work in educational administration. Upcoming vignettes and narratives illustrate and describe how participation in designed and emergent CoPs influenced Elise and AJ's learning.

Spartan Teacher Narrative, Elise.

Elise was looking forward to the upcoming U.S. history teacher meeting. "As a department we are extremely collaborative" Elise said about the U.S. history CoP. The department had a tradition of "look[ing] back on a lesson and if we are not in love with it we throw it out and we start fresh. It is no hard feelings. If it was your lesson it is not a personal thing…" During the department meeting, Elise knew that she wanted to change the unit on women's suffrage. "We talk about the unit plan, we look at the benchmarks, past lessons we have done, the assessment we have made." Teachers in the department used the same pacing of the unit, including lesson plans, activities, and assessments when teaching the each unit. The women's suffrage unit was developed by Elise when she first came to the department and was her first solid contribution as a recommended unit. Elise described the process of each teacher "owning" a lesson: "Each person will volunteer and we each take ownership for one or two lessons". Elise had used an assortment of lesson plans she found on the Street Law website and ideas from the summer AP Institute plus her own ingenuity to design the entire unit. Elise developed a website for the unit including a web quest and posted all of the lesson plans, student activities, web quest, primary source documents, and assessments online on a site called Moodle where teachers and students could access materials. Elise described the importance the CoP places on using online resources: "We do everything with Moodle; we make our own web quests on Moodle, websites, quizzes, and tests".

Elise knew there were some concerns with the women's suffrage unit and she wanted to discuss them with the rest of the U.S. history teachers. She saw room for improvement in the unit in several ways. First, the unit could incorporate more of the common core literacy standards. Professional development led by the curriculum consultant and AJ, the U. S. history teacher

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leader along with recent online list serves had given her more ideas for the unit. Elise was learning that "social studies will become more skills-based – document analysis, data analysis, construction of opinion based on information (primary and secondary source) given, and comparison and contrast of overarching themes." Students would also have to defend their stated viewpoints by presenting a logical argument in writing. Elise was grappling with how to incorporate the standards into the U.S. history curriculum and saw the women's suffrage unit as an opportunity to integrate the CCSS standards into the unit.

Elise also knew that the principal was encouraging teachers to ensure that common instructional timelines and assessments were being used in each course. The principal believed that teachers used a variety of teaching strategies in their classrooms and they should share their strategies to increase student engagement. Finally, the assistant principal who used to be a teacher leader in the department had stopped by to talk to Elise. She knew that the assistant principal was checking to make sure the strong norms of collaboration were still at work in the department. He reminded her of the department's usual tradition of examining units to see what elements of the units could be improved each year.

In light of what Elise was learning online from the College Board and Street Law list serves and blogs in which she participated, she thought the unit was lacking activities requiring students to work with primary source documents. This knowledge converged with her learning about the common core social studies literacy standards during district professional development and through following other teachers on Twitter. Elise also believed that AJ, another teacher in the study, might have some reading strategies from his work with the teacher leaders that could be incorporated into the performance task as students read primary source documents.

The U.S. history teachers agreed to meet after school just as they did before every unit. Elise described how the meetings "occur on U.S. history for every unit that allows for a lot of talk to occur. There is no length of time for that meeting. It is not like we say we are going to meet for a half hour; we basically are going to meet until we are done." The principal at Spartan was consistently asking teachers to take time to learn from each other when possible. He believed that teachers' learning from each other was important. Today the principal had allowed building professional development time, which took place once a month after school to be used for teachers to meet with their course-level peers. The U.S. history teachers had a tradition of meeting before each unit and were grateful for the time to meet during professional development instead of on their own time.

Elise presented her ideas about integrating more skills-based lessons with using primary source documents, analyzing documents, and constructing arguments. She welcomed any adjustments to the tasks and several teachers had some to consider. Her department was receptive to trying the newly designed unit. AJ knew of two reading strategies, close and critical reading (CCR) and question, answer, relationships (QAR) for reading primary source documents with which he believed the students would be successful. AJ had learned the strategies at a recent teacher leader meeting when the district social studies consultant, David (another participant in the study), presented them and then had teacher leaders use the strategies themselves. AJ taught the strategies to the department teachers, with the department members willing to try the strategies. Several opinions were expressed about the possible ways teachers might introduce the reading strategies and how teachers would be able to create an assessment to see if students were learning new skills. After completing the unit, the department teachers reflected on the reading strategies, including how they presented them, and the merits of each approach.

After the U.S. history teachers were done meeting, Elise reflected on how lucky she was to work with other teachers who considered new ideas with her. Working with the group of teachers on the unit re-designs filled Elise with pride. Elise said "we are pretty proud especially of U.S. history. Our curriculum is awesome. We really try to push ourselves. I am really proud of it."

Spartan Teachers' Geography of Learning

One purpose of this research is to contribute to the narrative on teacher learning in CoPs. Spartan teachers identified a variety of CoPs in which they learn that helps understand with whom teachers learn, where they learn, and about what they are learning. Upcoming sections provide data on CoPs most often identified by Spartan teachers regarding communities in which they learn. These communities are: the U.S. history CoP, teacher leader CoP, professional development, and online CoPs. The narrative depicts patterns of participation reflected in Elise's and AJ's interview data. Elise described districtwide and Spartan social studies departments, professional development conferences (AP College Board and Street Law), online CoPs, AP teachers in other schools, and the U.S. history teachers at Spartan as CoPs in which she learns. AJ described the districtwide social studies department, teacher leaders, higher education courses, professional development (AP College Board), fellow athletic coaches, and online CoPs as influencing his learning. Figure 4.3 depicts an individual look at AJ's pattern of CoP participation that demonstrates his geography of learning.
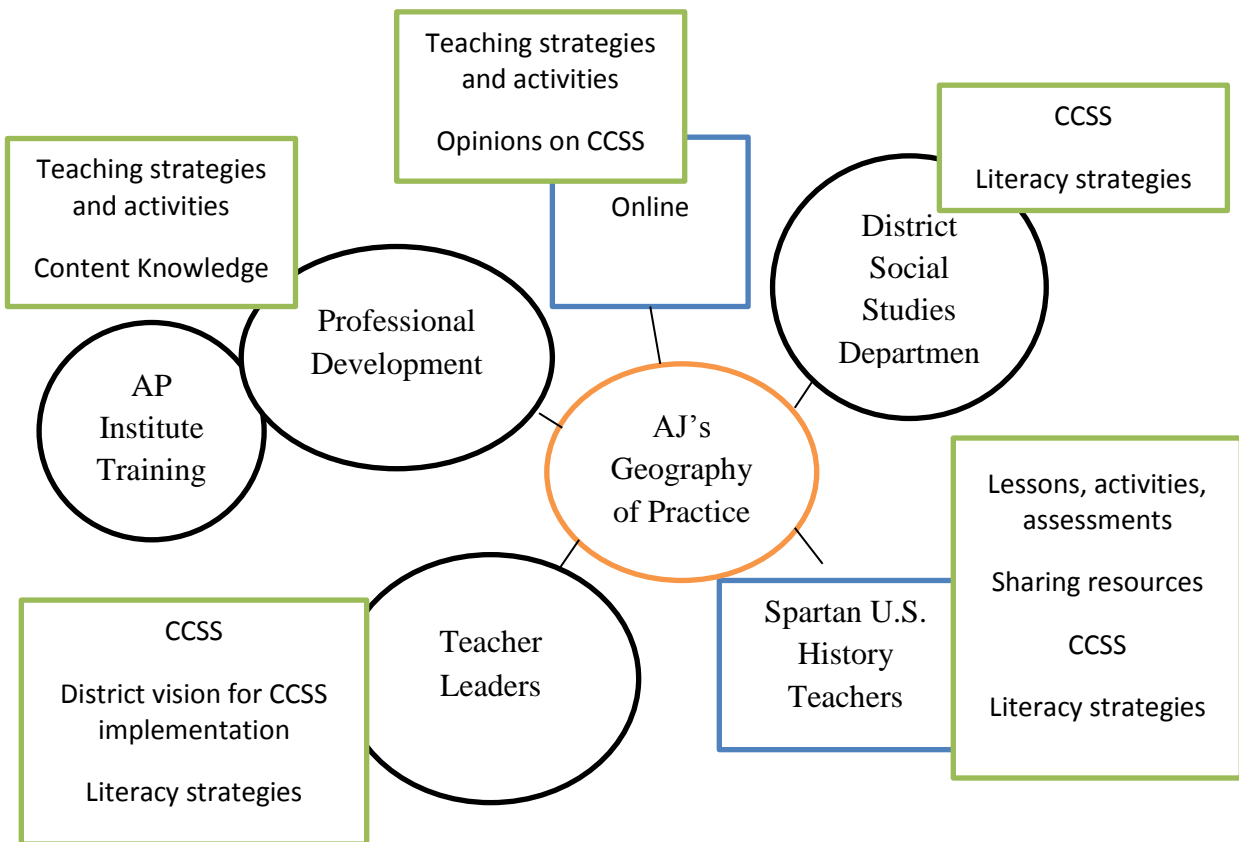
Figure 4.3 AJ's Geography of Practice

Spartan U.S. History CoP

Elise and AJ both identified the U.S. history CoP as a community in which they learn. Mutual engagement in the CoP was shaped as teachers were assigned to teach U.S. history and varied each school year. Some years, there were as many as five members and the year this study took place there were three members. This CoP has a historically established pattern of meeting prior to each unit of study. Leadership emerges based on which teacher "owns" the upcoming unit. Teachers trust members to take leadership roles for their units. Teachers converge to "…reflect on what we are doing and looking for ways to up the ante…" in their curriculum, lesson planning, activities, and assessment. Joint enterprise in the CoP involved developing and sharing lesson plans, assessments, and resources. Norms of the community established accountability for teachers to remain true to agreed upon instructional time lines through nearly

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identical timing of lessons, student activities, and assessment administration. AJ summarized joint work of the community this way

> ...we still get together and meet and review things that *did* go well in previous years and share different ways that we change a similar lesson to fit our class…Then we will think about other lessons that *didn't* go well and we will scrap some and add some others. What skills do we want to build into this and how does this fit into the big picture? And who is going to be responsible for putting this together...Then we have more conversation about narrowing it down to come up with a final product.

Elise provides a similar description of the communities' joint work:

> [In] U.S. history … we meet before every unit, [so] about every week and a half, every two weeks. We talk about the unit plan, we look at the benchmarks, past lessons we have done; the assessment we have made. [There] is a common assessment for U.S. history for every single unit. So, like for last year: What can we fix what do we want to use? We always make one ACT lesson, and now we are trying to gear toward the depth of knowledge wheel… If you walk… into any of our rooms we pretty much do similar lessons. Just the delivery might be different. We like to do similar lessons.

During the year this study took place, joint enterprises included comparing current practice to the CCSS standards and developing ways to integrate standards into existing practice. Elise described the U.S. history CoP was examining alignments between current units and new CCSS expectations, noting, "We already do this part for common core but we don't do this. So, we have to make sure we are encompassing this in our lessons". Both Elise and AJ demonstrated similar beliefs in their interview answers on how social studies pedagogy will change with the integration of the CCSS. They described how social studies teachers will integrate skills such as reading primary documents, finding evidence to support an argument, synthesizing evidence, and constructing a written argument to support a position.

As the narrative demonstrated, for Elise in particular, participation in this community is closely related to self-efficacy. As a result of participation in this CoP, Elise also feels proud:

"we are pretty proud especially of U.S. history. Our curriculum is awesome. We really try to push ourselves. I am really proud of it."

Teacher Leader CoP

The narrative and Figure 4.1 demonstrated how participation in the teacher leader CoP influenced AJ's learning. The teacher leader CoP convenes prior to each district PD to consider changes in social studies pedagogy that might develop as a result of common core implementation. An example would be David teaching the teacher leaders how to use two reading strategies (CCR and QAR) to interpret primary source documents. Of his learning in the teacher leader CoP, AJ stated:

> I have been working with both the teacher leaders across the district in terms of looking at the standards and what was already out there and what we are going to need to do to implement these things [and] dealing with evidence and synthesis and teaching argument. I think the number one community that we do those things in is the teacher leader model. When we meet especially this year discussing the common core, what it will look like, what the vision is for implementing, how are we going to build off of the things we normally do? I think that is the number one place where I get that continual development.

The teacher leader CoP was engaged in determining what CCSS standards needed to be integrated into the current social studies curriculum. AJ's description provided evidence of the social studies teachers' pedagogical knowledge adapting to include teaching students how to work with "evidence, synthesis, and teaching argument". AJ says the U.S. history CoP also is involved in "discussing the standards . . . [developing lessons that] . . . require students to take primary documents, analyze them, draw conclusions, and then defend an argument." AJ's comments about learning in the teacher leader CoP and volunteering to be a member of the CoP demonstrated the value he placed on membership in the community.

Professional Development

Elise participated in a professional development experience where she and a group of professionals convened in Washington D.C. for five days to learn about concepts in social studies from practitioners (for example, a Supreme Court Judge) that directly related to the AP Government course she teaches. Elise stated: "Once you go through that whole week you become part of their list serve and their community that you can log into called Net Zero and they have a constant feed of information. You can get lessons, swap ideas. Just really cool things you can draw from or just great resources."

Elise and AJ also attend the AP College Board four-day summer trainings that they indicated were very useful in helping them keep up with changes the College Board makes to courses. They also were able to network with other AP teachers who teach the same courses they teach. Both teachers were asked about their level of confidence in being able to implement CCSS. Their responses were nearly identical in stating that they felt their preparation and practices as AP teachers gave them confidence that they would be able to implement the CCSS successfully.

Online CoPs

Elise and AJ describe online CoPs in which they learn. As a result of her participation in Street Wise, Elise has password required, online access to a website coordinated by the professional development community. The community exchanges lesson plans, activities, and current information relevant to social studies content knowledge.

> … like list serves. I belong to two of them. One is for College Board that helps you with…the AP exam. The other one is for teachers that also swap and share lessons nationwide. Both of them have helped me immensely … I don't ever just hit print and I am going to do the lesson. It gives you a nice jumping off point. That way you can say, "Ok I am floundering here, I am struggling here, I know

what to do but how do I do it". Once you see something you are like now I can tweak it and make it my own.

AJ follows organizations and people on Twitter to learn more about CCSS. He also is a member of several list serves coordinated by the AP College Board who email information to him in regular electronic updates. When AJ is considering new ideas or lesson planning, he describes his process as first going online to research, then going to his department members for their ideas, and finally developing a finished product.

A summary of the Spartan teacher learning data is presented in Table 4.3. Like the previous table on the districtwide social studies department and teacher leader CoP, the table provides insight into the ways in which CoP participation influences mutual engagement, joint enterprise, and shared repertoire.

Burt High School Teachers

Kate is in her fourth year as a social studies teacher at Burt High School. She teaches a specialized subject area in the social studies discipline and is the only teacher in the school who teaches the subject. Kate is also an AP teacher and the only teacher in the school who teaches the AP course. Each high school in the district has two social studies teacher leaders. Kate is one of the teacher leaders for Burt High School. Teacher leaders from the same subject areas meet with the district social studies curriculum consultant on a regular basis to plan district professional learning for the rest of the social studies teachers in the district. Kate has a master's degree in education. David is also a teacher at Burt High School and has been teaching for a total of seven years. David taught in a neighboring school district during the beginning of his career and is in his fifth year as a teacher in the district. David is the district curriculum consultant for social

Table 4.4 *Spartan CoPs*

CoP identified by Spartan Teachers	Mutual Engagement	Joint Enterprise	Shared Repertoire
Spartan U.S. history CoP	Mutually agreed upon meeting dates, locations, length of meetings Informal leadership based on ownership for particular units or lessons	Purpose of meetings to review upcoming units, lesson plans, and common assessments Pose problems of practice and possible solutions How to implement the CCSS High accountability	Common unit plans, lessons, student activities, and assessments Shared language Shared pedagogical development Shared website and resources online
Professional Development outside district: Advanced Placement College Board and Street Wise	Set location, time, dates Led by professional organizations who employ facilitators	Learn teaching strategies, pedagogical development, lesson plan ideas and development. AP training high accountability for implementation of curriculum	Sharing of resources, teaching strategies, lesson plans, student activities, and assessment techniques Shared language and practices of AP teachers
Online CoPs	No set times of roles-voluntary engagement Members play roles as needed by community	Sharing lesson plans, teaching strategies, resources Discussion of issues affecting social studies pedagogy How other teachers implement the CCSS Dissenting opinions about the CCSS	Development of shared curricular materials such as: lesson plans, rubrics, assessments, web quests and student activities

studies and is released from his teaching schedule for several teaching periods as part of his role. David is also an AP teacher and the only teacher in the school for the AP course he teaches. David has a master's degree in educational administration. Claire is the third teacher from Burt High School in the study. She has been a social studies and English teacher for eight years, all of those years at Burt. Claire is currently a part-time teacher by choice (she teaches three hours in the morning). Her part time status affects her learning experiences and is included in this description because it is relevant to understand her perceptions. Claire is also an AP teacher and the only teacher in the school who teaches the AP course she teaches.

Burt Teacher Narrative, Kate

Kate was eager to talk to the rest of the social studies department about the new reading strategy she learned during a recent teacher leader meeting. When she arrived at the staff meeting after school, she remembered the principal was going to facilitate a discussion about teachers' use of homework as a learning tool. She had known the question was coming from the principal because she was on the professional development planning committee with which the principal consulted before building-wide professional development. Kate would have to endure the homework policy debate and hope enough time was left at the end of the meeting for her to talk to the department. Kate wanted to talk with her department because they were a group where "I can ask questions and sometimes when I am just trying to read something it doesn't have the same effect as if I am actually working with the material." Though Kate knew the question being posed to the staff by the principal, she could never predict the reaction of the staff as a large group. "I get overwhelmed and maybe even intimidated when I am in a group with very strong

personalities I tend to back away from sharing my own thoughts and ideas. I think that hinders my learning in those situations."

Kate spent time online learning more about the Question Answer Relationship (QAR) reading strategy since learning about it at a teacher leader meeting. She searched on Pinterest to read how other educators were using the strategy. She also was "texting back and emailing and sending ideas" with colleagues from other high schools in the district to determine if they knew anything about student engagement strategies. Kate spent time on the weekend with a science teacher friend and colleague. The two spoke at length about integrating the reading strategy into their practice. "I have a lot of cross department friends and colleagues that we typically bounce ideas off..."

Kate's ideas on integrating the reading strategy into practice were taking shape, and she was interested in determining how her department members would use the strategy. Kate did not "mind sharing ideas with others but I find if I am thrown into a group sometimes I lose kind of my own ideas." After the entire staff discussed homework policies at length, teachers were sent to their department groups where teacher leaders facilitated department meetings. They were supposed to discuss their collective opinions about homework policies and a teacher leader, Kate was partly responsible for facilitating the conversation with her department. She and the social studies curriculum consultant, David, were more interested in discussing the QAR reading strategy with the department, which they did. At the end of the meeting, David concluded the meeting by encouraging teachers to look at their current lessons and challenge themselves to integrate the reading strategy into their lessons.

Kate already planned to try a new activity with her class to incorporate the QAR strategy. Kate was learning a lot about the CCSS with the other social studies teacher leaders. To Kate, the

standards were about engaging students in higher order thinking activities. The QAR strategy

would help students make sense of primary source documents and answer higher order thinking

questions in the process. Kate also wanted to incorporate more writing into her lesson plans so

students would become more engaged and express higher level thoughts than what they were

able to when they simply completed a work sheet. During lunch over the next week, Kate and the

other social studies teachers talked more about QAR and how to incorporate the CCSS into their

practice. Some teachers were satisfied with their practice and Kate began to realize "…the

biggest challenge will be the autonomy of our department. While we are all close, we are not

collaborators. I think this lack of unity will be a challenge." Kate asked her science teacher friend

for lesson plans or ideas she was using to incorporate QAR into her class : " My friend … is

downstairs in Science and we are constantly sharing what works and how we can maybe take

that and adapt it to our own content area."

Kate also knew that the assistant principal at Burt had attended a workshop on the CCSS

recently and she had some ideas on how Kate could incorporate them into her classroom. She

asked the assistant principal to stop by during her prep time so Kate could learn more about her

thoughts on the topic. The assistant principal was able to describe some things she believed Kate

was doing already with regard to student engagement and integrating the CCSS. She also

suggested a book on student engagement that Kate that she might find helpful in incorporating

some protocols to increase student engagement. After their conversation, Kate felt confident that

she could use some protocols from the book and talked to her colleagues at lunch on how to

incorporate these strategies.

At the next building-wide staff meeting, Kate politely endured the meeting portion with a

mixture of anxiety and excitement. She was more interested in meeting with her department to

learn how other teachers were implementing QAR... She was particularly excited because Claire (another participant in the study) would be at this staff meeting. Claire was not required to attend all of the meetings because she was part time. Claire had been integrating more writing into her U.S. history classes. Although Claire and Kate did not teach the same content, Claire had creative lesson ideas and Kate wanted to hear what about lessons she was trying.

After gathering multiple thoughts and ideas about how to integrate QAR, higher order thinking questions, and writing, Kate was ready to try a lesson. She had students use QAR that incorporated higher levels of thinking and more writing. She talked to her science teacher friend on the way to work, going over her lesson one last time before teaching it. As the bell rang for first hour, Kate texted her science teacher friend for encouragement and began to welcome her students. Kate hoped that if the lesson went well she would have useful ideas to exchange with her department.

Burt Teachers' Geography of Practice

The narrative demonstrated several CoPs in which teachers from Burt reported learning. Teachers reported learning in the school wide community, with the district and school level social studies departments, buddy teachers, and online. The narrative provided a detailed picture of Kate's geography of practice. Figure 4.4 presents a visual representation of CoPs identified by David.
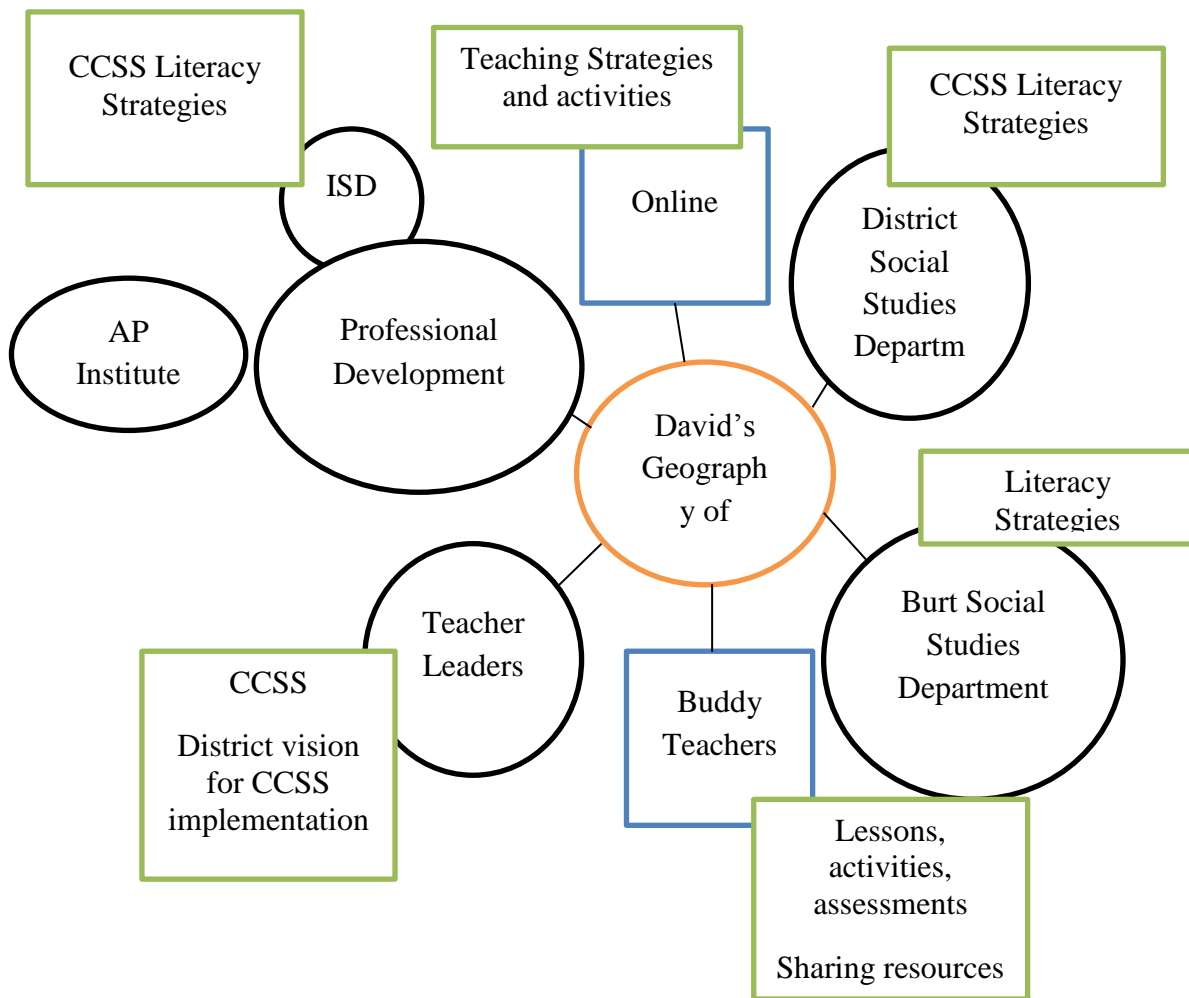
Figure 4.4 David's Geography of Practice

Buddy Teachers

All three teachers from Burt described at least one teacher who taught the same courses as someone who influenced their learning. These partnerships are referred to as "buddy teachers." The term, buddy teacher, was coined by David as he described teacher learning at Burt. Mutual engagement developed between buddy teachers based on which teachers are teaching the same courses each semester. David said his buddy teachers change over the years based on the courses he teaches. David identified social studies department buddy teachers as the

main partners in his learning. He explained that he learned more with a buddy teacher who was

teaching the same courses. David stated:

> What I see at our building is pairs, not groups. You have your buddy teacher
> that you work with and you know I have had a few of them through past
> years depending on what subjects I teach. They will say 'hey, take a look at
> this' or they will shoot me something back and forth. Um and I really see it in
> our school. It is not necessarily groups, but pairs. Like a tag team going on. …
> We break up into our pairs, not as a group. It is more like these are the
> people you have something in common with and you are going to sit down
> and let's work on this.

All three teachers choose buddy teachers for different reasons. Claire chose her AP buddy

teacher based on shared high standards for student achievement. When the interviewer asked

Claire on what she based her buddy teacher selection, she stated "I think it is based on, she

is a stellar teacher and I think I am a stellar teacher…Similar skill set, similar styles, similar

expectations with rigor and things like that." Kate chose her buddy teacher because she was

hired at the same time as the teacher, who has now become a close friend of hers:

> One of them, my very best friend here who was in my wedding and we have
> become very close we were just hired together. We were just trying to figure
> things out on our own from the start. We learned how similar we were in the
> process of that. Initially that was why we kind of bonded just starting out in
> the same spot, being able to relate when maybe no one else could.

David chose buddy teachers from those who were teaching the same courses, around the same

age, and embraced technology:

> I immediately was drawn to the younger teachers and I think it was an age
> group thing. I thought these people are going to be the newbies with me. We
> are told to do something and we do it because that is how we operate, our
> own opinions and things we hang on to are still being shaped and
> molded…These people look like they have turned a computer on before and
> have had that connection versus the other group.

Buddy teachers have a joint enterprise. Wenger (1998) stated that "joint enterprise is

defined by a community in their pursuit of it [joint enterprise]" (p. 77). Buddy teachers share

lesson plans, ideas, activities, and assessments. David described a process of emailing and

sharing information and resources between buddy teachers. The interaction with his buddy

partner that David illustrated includes exchanging ideas and teaching materials. David talked

with his buddy teachers in the hallway between classes, and during lunch.

Buddy teacher partnerships develop a shared repertoire. Shared repertoire often arises

through joint enterprise and mutual engagement. It is the product of the community including

terminology, lesson plans, and assessments produced by the CoP. The buddy teacher

partnerships may develop a shared repertoire as they engage in exchanging lesson plans. Buddy

teacher partnerships at Burt are engaged in activities related to teacher learning as sense making.

Kate identified a buddy teacher at Burt, as well as teachers in other buildings. According

to Kate, the two teachers share general teaching strategies that work for them and ways that they

can adapt the strategies to their content areas. Kate indicated the communities about which she

discusses most with her buddy teacher: curriculum, instruction, and student learning:

> I would say mostly the informal groups. The friends that I have. Teachers in
> other buildings that teach the same subjects…that I do that are texting back
> and for the and emailing and sending ideas. My friend…is downstairs in
> Science and we are constantly sharing what works and how we can maybe
> take that and adapt it to our own content area. So for me it is mostly like
> informal groups that are where that is all happening.

Burt Social Studies Department

All three teachers from Burt explained how participating in the Burt social studies

department CoP contributed to their learning. Kate's participation in the CoP contributed to how

she makes sense of the CCSS. Kate stated that she preferred to make sense of the standards with

department members by asking questions. David also defined how the social studies department

at Burt as a whole was learning about QAR. Claire relied on the department members to keep her

updated on information from staff meetings and building professional development that she missed because of her part-time.

Professional Development

Both David and Kate inferred that the AP training they receive every summer helped prepare them to implement the CCSS. David, like the Spartan teachers, expressed confidence in integrating the CCSS into current practice "because a lot of what the standards are asking for are tasks the AP curriculum already requires." Kate believed the CCSS involved promoting higher order thinking skills, which she thought she already knew how to implement because she taught the skills in her AP courses. Clair expressed comfort with the CCSS because she already incorporated writing into her courses. None of the Burt teachers felt that teaching literacy standards would be a challenge for them personally because they were AP teachers and already were incorporating literacy standards into their curriculum.

As the district social studies consultant, David participated in several designed CoPs to learn about the CCSS. David is a member of a professional development series through the intermediate school district (ISD). This designed COP is working on implementing of teaching strategies related to the CCSS. He made further sense of QAR, and how it might be used in social studies by collaborating with middle school teacher leaders in the district. This example shows how the CoPs in which David participates could influence learning in the district and Burt social studies CoPs.

Kate completed a reading class as part of a requirement to obtain her professional teaching certificate. As part of the reading class, she used the CCSS literacy strategies and integrated some of them into her current lessons. Kate does not identify specific skills students may need other than stating that students will need to engage higher order thinking skills. Overall, Kate is more conscious of the need to incorporate "literacy strategies" into her lessons.

In another interview question, she described the addition of more writing into her lessons in light of the CCSS. Some of Kate's sense making about literacy standards occurred through participation in this designed CoP.

Online CoPs

When asked how he prefers to learn David expressed a preference for learning in online CoPs. David indicated that he does most of his learning online and considers the online environments CoPs:

> I am…big into learning on my own through social network stuff like Twitter and there is an app called Zite on the IPad and so when I sit down at the end of the night I turn those on, flip through those channels and I get that information on my own. It is a community because it is a community of people posting information. It is not face-to-face community but it is that online thing. I find people I follow, people post articles and if I see something interesting I will take a look at it. I do that way more now than going down next door and saying 'hey did you see this?' it kind of seems like there is so much stuff that I would just be knocking on someone's door all the time saying 'look at this, look at that'. So I think I do my own learning now through communities but it is not the face to face community.

Kate also discussed using the social media site, Pinterest. She stated that she used the site to "read and get different ideas." Neither Kate nor Claire use Twitter as described by David and AJ. If Claire did any learning online, it was through the use of a search engine to obtain information. Claire also communicated with another AP teacher at a different high school in the district through email. Teacher learning data from Burt is summarized in Table 4.4.

Table 4.5 *Burt CoP Participation and Teacher Learning*

Community of Practice	Mutual Engagement	Joint Enterprise	Shared Repertoire
Burt Buddy Teachers	Meetings based on common lunch and prep hours, location and proximity to each other in school Membership based on courses assigned per semester Characteristics in common such as age, experience, and similar beliefs	Pose problems of practice and possible solutions Share lesson plans, student activities, assessments, and resources Make sense of information related to content area	Sharing lessons plans, student activities, and assessments Shared language develops as teachers exchange material Shared pedagogical development Shared standards and expectations for student performance
Burt Social Studies Department	Meetings often take place as break out groups after whole staff meeting Formal leadership by teacher leaders and David	Discuss building culture issues Learn about QAR literacy strategies to use with students as means to integrate CCSS	Historical knowledge of department develops through participation. Shared language, ideas, artifacts develop as teachers implement QAR into shared practice
Online CoPs	Voluntary participation based on teacher needs Limited set times or roles Some set times and members if participating in Twitter chats Members play roles as needed by community	Sharing lesson plans, teaching strategies, resources Discussion of issues affecting social studies pedagogy Sharing technology resources to support instruction	Development of shared curricular materials such as: lesson plans, rubrics, assessments, web quests and student activities May develop shared ideas about CCSS and ways to implement CCSS

CoP Participation Varied Influences on Sense Making and Shared Practice

Teachers' patterns of designed and emergent CoP participation influenced learning differently. David, Elise and AJ made similar meaning of the CCSS literacy standards and how they may change teaching and student learning (see Table 4.5). Kate and Claire had somewhat similar understandings. Table 4.5 includes quotes from teacher interviews which demonstrate in part how the CCSS may change social studies teaching and student learning.

Table 4.5 shows several commonalities in how teachers in this study made sense of the CCSS and its possible influence on social studies teaching and student learning. David, AJ, and Elise all expressed similar descriptions of how social studies pedagogy would change as they implemented the CCSS. Kate described the inclusion of higher order thinking and writing as changes to her practice. Claire stated that more writing and research would be included in her teaching practice.

According to Wenger (1998), communities of practice were often interrelated. Proximity and distance between CoPs could facilitate or hinder teacher learning. Proximity and distance changes also influenced strengthening or weakening of ties between CoPs. As members of CoPs made sense of the CCSS they developed meanings about how teaching and student learning would change.

Data collected for this study did not allow for discovering how the difference in teachers' sense making of the CCSS would influence social studies teaching. When looking across the geography of teacher practices between all five teachers there were no patterns which emerged that demonstrated how variances in understandings occurred. Differences in sense making may result in variances between schools and teachers within the same schools and how their shared practice develops as they implement the CCSS.

Table 4.6 *Common Core Changes to Teacher Learning*

Participant	Common Core changes to teaching
AJ	• "…we have been trying to develop more lessons that require students to take primary documents, analyze them, draw a conclusion and then defend an argument". • "…how to work with evidence, synthesis, and teaching argument". • "Students need to demonstrate real skills. We need to have students proving their analysis of information".
Elise	• "…ok we already do a ton of document analysis. Ok, perspectives, pulling in other resources". • "What we do know is this: social studies will become more skills-based, document analysis, data analysis, construction of opinion based on information (primary and secondary source) given and comparison and contrast of overarching themes also creating more skill based formal and informal assessments, and incorporating skill-based levels into our teaching."
David	• "you know one of the big things with common core right now is analyzing primary source documents" • "The question is how can you get it into everyday practice of kids looking for evidence which seems to be the biggest point of common core. Can you find evidence, can you analyze evidence, can you compare it across different content areas and make an argument based off of that"
Kate	• "I understand already how to promote higher level thinking which is a big thing with common core…" • "…common core and how they want you to think further into the topic instead of just recalling information …" • We don't really have anything new. I think it would more so be trying to incorporate the literacy and the writing aspect into a social studies class because they don't expect that and they don't want to write".
Claire	• "… Incorporate a multitude of writing into my history curriculum. • "Writing, research..."

Summary of Teacher Data Findings

Data in this chapter contributes to the narrative of the geography of teacher practice across both designed and emergent CoPs. Teachers in this study learned socially through participation in existing CoPs, such as district, school, department and course level meetings. Teachers interacted through the nested nature of the school organization in emergent, often more organic CoPs where learning also takes place.

Two narratives, figures, and descriptions of the practice of CoPs identified by teachers were used to summarize data on teacher learning in CoPs at each school. Wenger's (1998) geography of teacher learning demonstrated that "proximity and distance can facilitate or hinder learning" (Wenger, 1998, p. 130). Descriptions showed when mutual engagement, joint enterprise, and shared repertoire developed around similar topics, such as the CCSS, teacher learning occur. Descriptions also show that when the practice of CoPs does not coalesce around similar topics or topics deemed useful by participants, teacher learning may be hindered.

Teachers in this study learned in designed CoPs such as the district wide social studies department, school level department, professional development, and teacher leader CoPs. Teachers also learned through emergent COP participation. Emergent CoPs were buddy teacher partnerships, online communities, and the U. S. history CoP at Spartan. Emergent COP participation took place with some teachers inside schools, and among teachers in different schools who taught the same courses.

This research is distinctive in part because it used a complex definition of teacher learning to examine how CoP participation influences teacher learning. Teacher learning in CoPs results as mutual engagement, joint enterprise, and shared repertoire develop among community members. Data presented in this chapter showed how teacher learning unfolded through social

interactions as teachers participate in multiple designed and emergent CoPs. CoPs existed in the complex nested school organization that provided opportunities for teachers to learn and influence each other. Teachers participated in combinations of designed and emergent CoPs which accounted for variances in learning about the CCSS.

CHAPTER 5

Discussion of Research Questions 1-3

One purpose of this study was to describe how high school teachers learn about common core state standard (CCSS) implementation through designed and emergent community of practice (CoP) participation. This chapter will address research questions 1-3 which were:

1. How do designed and emergent communities of practice influence high school teachers' sense making?

2. How do designed and emergent communities of practice influence high school teachers' shared practice?

3. How do designed and emergent communities of practice influence high school teachers' identity?

Chapter 4 described the geography of teacher learning through CoP participation to display how mutual engagement, joint enterprise, and shared repertoire may develop. This chapter explores how these activities interact with teacher learning, explored as the combination of sense making, practice, and identity (Figure 5.1). It presents analytic narratives of three of the participating teachers: David, AJ, and Elise.
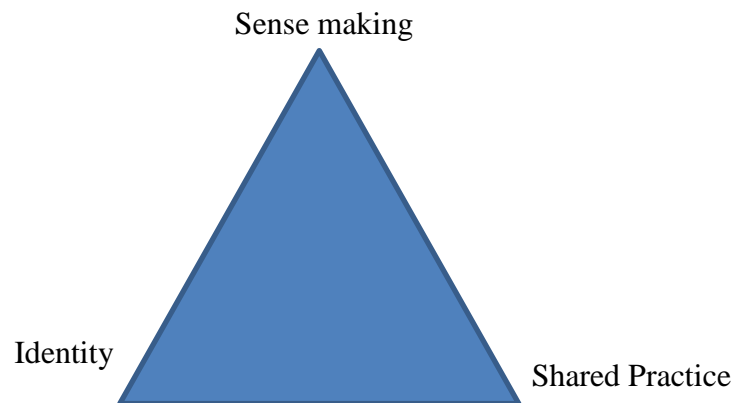
Figure 5.1 Teacher Learning

Analysis of David's learning

    Sense Making

    Wenger (1998) described the process of making meaning as "a way of talking about our changing ability…" (p. 5). As David learned about the CCSS, he navigated the duality of sense making both as a teacher and a leader of the CCSS. David was making sense of how social studies curriculum, lesson planning, and tasks he performed as a teacher would change as he integrated the CCSS. As David participated in professional development (PD) at the intermediate school district (ISD), his sense making evolved and he came to believe that a foundational belief when integrating the CCSS was "If you can get them [students] to think, that is better than teaching to the standards." David embraced the narrowing of content coverage for greater thinking skills integration. However David also had to consider this shift from the perspective of social studies teachers he leads as he struggled with the question: "…it is ok for them to go into in- depth thinking and not cover every benchmark?" David had to make sense of his own beliefs about this change as he contemplated how to lead teachers toward the shift. Part of this process included David negotiating meaning situated in the historical practices of teachers in the district:

> … when I hear certain teachers who will say 'ok I am giving notes on 1.1 and then the next day 1.2, 1.3, 1.4 it is great that the kids are learning to take notes. That is a skill they definitely have to have but they are just reading a text book that is designed to be at their level. Where is the challenging work in front of them that they have to make something out of it? Teachers are uneasy about leaving the model of cover every benchmark and cram everything in to go towards a model of deep thinking and understanding, which inherently takes more class time.

David's sense making included being aware of the current state of teaching social studies in the district and structuring teacher learning to shift the paradigm from covering every benchmark using more traditional teacher-centered styles to in-depth thinking skills and more student-centered methods.

Practice

The CCSS standards for social studies were literacy standards, not content standards. David was negotiating meaning of competent teaching as he figured out how to teach literacy standards (Wenger, 1998). His sense making about the CCSS led him to believe that through the integration of routines and strategies (Visible Thinking, Close and Critical Reading, Question-Answer-Relationship/QAR, Multi Modal Presentations); he could introduce literacy standards into curriculum. As David contemplated a different conception of good teaching, he assessed his environment for support and risk. According to Wenger (1998), "CoPs act as locally negotiated regimes of competence" (p. 137). David made sense of what those around him wanted to see and their conceptions of good teaching, as well as how to implement the CCSS successfully. David wanted to be able to experiment with the CCSS but was trying to make sense of how he can take risks:

> I think that would be nice to know from the administrators that there is freedom in how you do everything. You should have that freedom to really get in depth with things. So I guess in what we were talking about before that idea that it is ok for teachers to do creative thinking instead of step by step here is my homework schedule …Here is a graphic organizer but it makes them have discussion so the teachers turns into a facilitator. If I have an administrator in my classroom yet I am going to open it up to class discussion. What are the kids going to say? You know that loss of control. Like somebody is looking at you. You know some things are going to go wrong and it is going to be all over the place versus here is my lesson top down.

David also was making sense of what student learning would look like with the implementation of the CCSS. He was trying to make sense of how student learning changes and how to move students toward new demands. He did not want to teach students recall information that they can "google" anymore: "The question of how did the outside world view the Cuban Missile Crisis you know you can't really Google that. You have to actually do some research on

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it to come up with that different view point." David's sense making has led him to believe that students learning will look different:

> The question is how you can get it into everyday practice of kids looking for evidence which seems to be the biggest point of common core. Can you find evidence, can you analyze evidence, and can you compare it across different content areas and make an argument based off of that?

As David was trying to move students toward these new demands, he also was aware that students might not want to move with him:

> I have exit surveys from my AP class and I ask them do you like the top down model where the teacher is presenting and a lot of them say yes, they really like it. They like the top down model because it is how they are taught in college. The second part is that they sit back and say, it is like that text book again and the teacher summarizes it and it is easier for them to learn. So that is where we have to walk that fine balance where lectures, they are not evil but where can the kids pull that evidence from that balance.

As David changed his practice and encourages other teachers to change theirs he is sense making around asking teachers and students to change teaching and learning in a new way which he acknowledges may not be well received. As a leader David was also making sense of how to help other teachers in CoPs that he has membership in move student learning toward new goals. Teachers may be afraid to change curriculum by focusing on in depth thinking activities. Teachers might not see value in sacrificing class time and control for teaching methods suggested by David. Students also express that they like teachers lecturing to them because they believe their higher education experience will include lecture and it is easier for students.

Identity

Identity can be thought of as "how we talk about how learning changes who we are and creates personal histories of becoming" (Wenger, 1998 p. 5). David's data demonstrated his personal history of becoming a competent social studies teacher and leader of teachers. He negotiated meaning about competency from the variety of CoPs he is a member of. He was

mindful of the accountability pressures teachers felt when they considered making changes to their practice and student learning. David developed beliefs about what it means to be a competent social studies teacher which may have been different from what other teachers, administrators, and students considered adept. During the year this study took place David was also becoming a leader of teacher learning which meant he negotiated additional complexities of how to structure teacher learning.

David's sense making evolved in relation to his identity as a leader. He spends time figuring out how to frame learning about the CCSS for teachers: "planning professional development meetings and searching for best practices targets to implement district wide" David considered activities he would ask teachers to engage in to learn about the CCSS, what strategies to privilege, and these decisions reflected his leadership. David wanted to lead teachers toward his vision of how the CCSS will change social studies pedagogy but had to do so in a way that teachers would be receptive. The leadership position allowed David to act as a broker between multiple designed and emergent CoPs as teachers defined new definitions of competency. Wenger (1998) defines brokers as actors who are able to "make connections across CoPs, enable coordination... and open new possibilities for meaning (p 109)". Brokering involved helping CoPs make sense of, organize, and align viewpoints. In order for brokers to initiate learning they must have legitimacy with the CoP. Of legitimacy Wenger states that brokers "...yield enough distance to bring a different perspective, but also enough legitimacy to be listened to (p 110)". As David gained competence in his role as a leader his ability to act as a broker between CoPs may change.

Through participation in the ISD CoP David learned about, and made the decision in part, to frame sense making for high school social studies teachers during professional development

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time in the district through the implementation of reading strategies into social studies pedagogy. David emphasizes the QAR strategy for teachers to use as they have students read primary source documents. Coburn demonstrated in her 2001 research on elementary teachers implementing a reading policy, that one role leaders enact which influences teachers social interactions is bringing in and privilege certain messages from the environment. He taught QAR to teachers as a way for teachers to write higher order thinking, or more in depth thinking, questions for students to answer when they "use text as their launching pad". But whether or not teacher actually change their practice is then left up to them: "…we talked about the questions answer relationship model …and then we kind of let them go on their own to take a look at the common assessments and what writing pieces they want to put in." David viewed himself as someone who facilitated teacher learning rather than holding teachers accountable for implementation of the CCSS.

David also framed teacher learning about the literacy standards by having teachers work through example performance assessments. This activity helped teachers make sense about how students will be assessed on the literacy standards. David believes that teachers are mindful of "…how will the[y] or their students be penalized under a performance based merit system". Several statements in his interviews were about trying to make sense of asking teacher to let go of required standards in order to prepare students for performance standards and dealing with the uncertainty of the implications of this choice.

Analysis of AJs learning

Sense Making

An analysis of data from AJ did not demonstrate the same information about his changing ability as compared to David. Instead, AJ's data showed he viewed sense making from the perspective of how student's abilities would change as a result of the CCSS: "…here are the skills we need to focus on at the freshmen level so that they are getting ready for the next class and you need to build into the junior and senior levels where we can really remove a lot of the scaffolding." AJ also described how "Students need to demonstrate real skills. We need to have students proving their analysis of information." AJ described how changing assessments would require teachers to re-design assessments and have knowledge of how to design questions that can measure skills: "getting more analysis, investigation, conclusion types of questions which multiple steps and that is going to take a lot from teachers…"Overall when AJ discussed the changes to teaching and assessment he did not discuss his changing abilities as much as he focuses on students' changing abilities.

One area where AJ did discuss his changing abilities is in the area of developing assessment: "Primarily we have been using multiple choice exams. Those aren't going to cut it with the common core." AJ had been a teacher leader for several years and the joint enterprise of the CoP used to be designing and maintaining common assessments for the department. This is most likely why AJ makes sense of the CCSS in relation to how it will change assessment practices.

Practice

Like David, AJ was in a formal leadership position as teacher leader. AJ made sense of the CCSS as both a teacher and a teacher leader. AJ described sense making with the teacher

leader CoP in two ways. He described how teacher leaders are "…looking at the standards and what was already out there and what we are going to need to do to implement these things, dealing with evidence and synthesis and teaching argument…" However AJ seemed to have made sense of how to implement the CCSS as determining "how teachers can add material to existing curriculum: how are we going to build off of the things we normally do." He does not discuss narrowing of curriculum or focusing on the paradigm shift of thinking skill prioritized over content.

As a teacher leader AJ was responsible for communicating his learning in the teacher leader CoP back to the U.S. and World History CoPs at Spartan. AJ said that the U.S. History CoP has been looking at "What skills do we want to build into this and how does this fit into the big picture and who is going to be responsible for putting this together and then providing resources for that individual." AJ stated that the CoP has also been developing lessons to integrate the CCSS:

> US History teachers … have been trying to develop more lessons that require students to take primary documents, analyze them, draw a conclusion and then defend an argument. So I mean it is not a whole scale change but you can already see the seeds of change in the different groups and communities.

Data from AJ demonstrate that implementing the CCSS was an addition of lessons that build on practices he believed the department already incorporated. Part of his process of making sense of how the CCSS influences his practice was to determine where there are areas in the curriculum that he could build on, rather than more fundamental changes to teaching practice as we saw David contemplating.

Identity

In considering how data from AJ revealed how CoP participation shaped identity it seemed that because of how he viewed the CCSS and his own competencies, learning about the

CCSS was not changing his identity to a great degree. AJ felt he has the ability to incorporate many of the practices he described because of his experience as an AP teacher. He did not view the CCSS as a major change to his ability or who he is a teacher or teacher leader. AJ did experience a change in his role as teacher leader from that of being responsible for managerial tasks such as assessment maintenance. He approached his teacher leader role in a more managerial style as a communication conduit of information between David and the U.S. History CoP versus communicating how teachers' abilities may change in response to the CCSS.

Analysis of Elise's Teacher learning

Sense Making

Elise learned about the CCSS through participation in a variety of CoPs: designed, emergent, and online. Through her sense making activities in the district social studies, U.S. History CoP, and participation in online communities Elise made sense of how social studies "will change to integrate more skill demonstration." When considering sense making as a way of talking about our changing ability, data from Elise demonstrated how she is changing the types of lesson plans, and assessments to integrate the CCSS. She believed that students "…will need to do more document analysis, data analysis, construction of opinion based on information given, and comparison and contrast of overarching themes." As Elise identified skills students would need to demonstrate, she made sense of how teaching will change by examining other teachers' lesson plans and integrating parts of lessons into her own practice. Elise planned units, lessons, activities, and assessments with the U.S. History CoP. The community was involved in figuring out "What parts of the curriculum already incorporate the CCSS and what parts of the curriculum need to be changed to include the standards." Elise prided herself in the curriculum and units that

the U.S. History developed. Part of her identity came from her practice of being able design

units, lessons, activities, and assessment that she was proud of.

Practice

Elise was concerned about message she receives from the outside environment that the

state legislature might not fund implementation of the CCSS. Elise states "I am hesitant, because

common core is supposed to be rolled out next year, and like any program, successful

implementation comes from successful preparedness – and the resources or information have not

been released." Elise relied on preparation she collectively negotiated with the U.S. History CoP

as part of her practice. As she made sense of conflicting messages about if the CCSS, funding

and resources would be accessible to teachers in time to prepare for the upcoming school year,

she is hesitant to change her practice too much.

Elise was also leading the U.S. history CoP in incorporating assessment questions to

include a higher "depth of knowledge" than their multiple choice assessments allowed for. Elise

was a leader in the CoP in making sure that each unit included one "ACT style lesson". This was

to prepare students for the ACT test which is one accountability measure in the State of

Michigan related to teacher performance. With the addition of the new state assessments

connected to the CCSS, Elise began updating the practice of the community to include

preparedness for the new accountability measure.

Identity

As Elise thinks about her identity, who she is as a teacher, as she participates in CoPs she

viewed herself as someone who developed lesson plans, incorporated lessons to prepare for state

accountability tests, and liked to be prepared. Elise continued in her role as the CoP made sense

of and changed practice. Elise is an example of what Wenger (1998) calls "marginal position

(pg. 166). Her role and how she maintains the role even in response to changes keeps her in the position. She makes sense of the CCSS through the lens of her role as lesson planner, assessment creator, and preparedness. Elise described how AJ comes back from teacher leader meetings and sets the direction for the CoPs work: "ok guys here are where we need to gather the info and rally the troops". Elise then takes the role as one of the "troops" by generating ideas, lesson plan, and informal assessments. Elise will continue on in her role, but she now includes lesson plans and informal assessments which teach and measure the skills in the literacy standards.

Interactions among Sense Making, Practice, and Identity

When looking across data from all three teachers there are three common observations that can be made. All three teachers share a focus on how student skills will change. The CCSS represent a demand for forms of intellectual work that may differ from the past and challenge students. In order for students to do different kinds of work, teachers will have to renegotiate meanings of competency: what is good teaching, what a good lesson looks like, and how to assess students.

As teachers renegotiate meaning of competency there are undercurrents of concern expressed about how to foster new skills in students. It was evident from David's data how he was becoming, and influencing other teachers to become competent at teaching literacy standards through social studies content. Teachers were talking about how teaching and learning may change. They were concerned about getting resources, aligning curriculum, integrating skills, and cultivating thinking and intellectual skills. Teachers wanted to learn how to facilitate this type of learning in students and how others around them (colleagues, administrators, and students) would view their changed practice.

Teachers were mindful of the role assessment plays as they implement the CCSS. They were aware that student performance on the assessments associated with the CCSS would be different than the state assessments and the way they currently use local common assessments. Comparing data across all three teachers demonstrates how teachers' sense making takes place in the context of accountability measures. Opfer & Pedder (2011) described how teachers learning tool place in complex nested environment, which was influenced by contexts outside of the classroom, school, and district. Teachers' sense making took shape not only in the immediate environment of teachers in schools, but also as teachers operated in an accountability environment.

How CoPs Interact with Learning

Several designed CoP activities took place during the school year to facilitate teachers' sense making of the "official" district vision of how implementation of the CCSS would influence social studies pedagogy. In order to learn about the CCSS and how to implement the standards, David participated in a designed CoP at the ISD. Through participation in this professional development David has learned about, and made the decision to frame sense making for high school social studies teachers during professional development time in the district through the implementation of reading strategies into social studies pedagogy. In designed CoPs (district social studies teachers and teacher leaders) teachers made sense of the "official" school district vision of how social studies pedagogy would change as a result of implementation of the CCSS (Horn, 2005).

Beyond learning about the official school district vision of the CCSS in designed CoPs, teachers' sense making activities, the meaning they made of the official district vision, changes to practice and identity took place through emergent CoPs in each school differently. Though

Elise, AJ, and David all are teachers within the same school district and have multi-membership in some of the same CoPs, their practice was situated within each of their school contexts. At Burt that context was negotiated through buddy teacher partnerships and at Spartan among the U.S. History CoP. Past research describes how teacher negotiated practice within the situated context of the schools in which they work. Talbert & McLaughlin (1994) found that "norms of teaching practice are socially negotiated within the everyday contexts of schooling" (p 141). Yasumoto et. al (2001) indicated that subject area CoPs encouraged strong networks among teachers where interactions centered on the "everyday work of teaching" (p. 182). Siskin (1997) argued that high school teachers departments are a "…critical site for teachers' sense of identity, practice, and professional community, deeply woven into the social, political, and intellectual workings both of the profession and of the individual schools" (p. 605). The differences in their daily context influenced the meaning teachers made of the CCSS in relation to their practice and identities.

Over the course of the interviews with David, AJ, and Elise the story of how they made sense of the common cores influence on their practice unfolds. This study demonstrated two different geographies of practice between Burt and Spartan High Schools. Differences between norms of interaction at each school cause variance in teachers' access to CoP participation. Not only access, but also what meaningful roles are available for teachers to shape sense making and practice in CoPs. Wenger stated practice can be thought of as "learning by doing". Odfer & Peder (2011) demonstrated how when teachers participating in CoPs engaged in understanding and improving teacher learning, changes to teacher behavior and practice becomes an "ongoing and collective responsibility (p. 385) rather than left to individual teachers. In order to participate in CoPs, norms which exist at the school have to support social interaction as a legitimate form

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of learning. If teachers do not have access to CoPs to participate in and norms of interaction in the school do not motivate teachers to learn socially then changes to teacher behavior and practice through CoP participation may be limited.

Norms of Interaction at Burt Created Limited Access to CoP Participation

The three teachers from Burt identified buddy teachers as their main learning partners. A range of activities between buddy teachers was demonstrated in Chapter 4. David describes his experiences with buddy teachers as influencing his practice. They share lesson plans, activities, assessments and ideas. Buddy teachers help make meaning of how implementation of the CCSS influenced practice. Buddy teachers make sense of the CCSS and changes to practice through the negotiated understandings they developed through social interactions.

There are several factors which limit buddy teachers interactions. Teachers are not consistently paired as the partnerships depend on who is teaching what course each semester. Teachers have no consistent time with each other to learn from social interactions. David has lunch and hallway exchanges with his buddy teachers; Kate's buddy teacher is her friend and they meet on their own time during informal interactions; Claire's partner is in another high school in the district and they meet sporadically on their own time. Past research has shown that in order for practice to develop among CoPs, participants need consistent time with one another (Coburn, 2005).

While teachers at Burt value their interactions with buddy teachers, their practice was not dependent upon them. Teachers described sharing lesson plans already developed, or discussing lesson they have already tried. The exchange of lesson plans, ideas, and activities contributed to teacher learning, but teachers were dependent on buddy teachers to develop their practice. Teachers needed a reason to want to participate in CoPs. Weathers (2011) described the pull of

shared beliefs, values, and norms as the binding mechanism which compels community members to participate. Norms of interaction at Burt did not include negotiating practice within the situated learning environment of CoPs partly because of limited access and partly because of school culture. Teachers adhere to traditional roles of sharing lesson plans and activities through buddy teacher partnerships. Teachers at Burt do not depend on each other for the development of their practice or express the need to do so.

Teachers at Burt also have a very strong gate keeping norm of interaction when considering changes. David believed teachers at Burt were not counting on the literacy standards on being too much of a disruption because of school wide beliefs about change due to their status as a high performing school. David said that he learns about ideas on how practice can change to integrate the CCSS. However there is a building wide established belief at Burt that "If you cannot prove to our community this is the something that the best are doing, if this is not something U of M or the AP Board wants then they snuff it away. So when I hear these ideas and bring it back to that community I get that spin off…" Here we might see what Coburn (2001) found as a role of teachers' CoPs as gatekeepers. Coburn found "once teachers constructed an understanding of what a given message was about, they either engaged with the idea or approach or dismissed it" (p. 154). The Burt school cultures tendency to dismiss any idea which is not something that another high performing school is adopting or that will be looked upon favorably by universities and the College Board plays a role in the rate of implementation literacy strategies are adopted.

Norms of Interaction at Spartan Allow Access to Cop Participation

Norms of interaction at Spartan allowed teachers access to CoP participation. Elise and AJ were members of the U.S. History CoP which was a teacher-driven, more organically

developed community in which they participated in to make meaning of the CCSS. Participation in this CoP was important to both teachers. Teachers who valued participating in CoPs such as Elise and AJ have adhered to norms in the U.S. history emergent CoP. Norms stipulated time lines for reflective dialogue centered on comparing past practice, current practice, and emerging practices as teachers implement the CCSS. Teachers co-constructed meaning of social studies pedagogy situated in their school context. Teachers were provided time by administrators to meet. Teachers also assembled on a regularly established meeting schedule during their own time; in addition to the time provided by administration.

Elise and AJ described a somewhat different development of their shared practice in the U.S. History CoP. The US History CoP development of shared practice centered on talking about their unit plans, taking a look at which benchmarks were included in past lessons, and assessments they used with each unit plans. They divided up responsibilities based on content: 'Who wants the McCarthyism lesson, Cold War policy lesson?' They organized their division of labor in part based on covering content. Elise used to make sense of things like how to teach the McCarthyism lesson and had access to resources like Net Zero and the Advanced Placement (AP) College Board List serve to get lesson plan ideas to bring back to the U.S. History CoP. Now they are involved in developing lessons which require students to take primary documents, analyze them, draw conclusions, and then defend arguments.

Members of the U.S. History CoP believed they can make sense of the CCSS by refining their curriculum, lesson plans and assessments. This was common in the CoP because learning was situated in the regular practice of reviewing unit plans for what did work and throwing out what did not work. As AJ communicates his sense making from the teacher leaders CoP and Elise has developed her own understandings about the CCSS they have both made nearly

identical sense of how the CCSS will change social studies pedagogy. Both teachers demonstrated how their sense making about practice in the U.S. History CoP used to center on content and now will include the implementation of skills. As they negotiated what skills they believe need to be integrated into the curriculum they are also negotiating social studies pedagogy.

The U.S. History CoP teachers were responsive to student needs and develop their shared practice based on data from common assessments. Elise described how participation in the U.S. History CoP allowed her to change her practice to meet student needs: "We try to keep up on how we can increase student achievement". Practice in this CoP included using pre-test and post-test common assessment data, entering data into a data warehouse, and using data to change their practice. Teachers deliver their assessments through an online web site, which according to Elise, they "immediately get the data, which is nice". Teachers looked at each common assessment item and for those questions that many students got wrong teachers discuss "what went wrong here?" Practice in the U.S. History CoP included teachers reflecting on past units in terms of successful iterations of unit plan implementation and student performance.

Special Influence of Sample

It is important to discuss how this sample influenced these findings. All of the teachers in this study are AP teachers. When participants were asked about the communities in which they learn nearly all stated the AP Institute was a source of their learning and thus a part of their identity as teachers. All five teachers were also asked about their confidence in being able to successfully implement the CCSS literacy standards and their answers were that they were confident, based in large part on their beliefs that as AP teachers they already integrate literacy

into their curriculum and have the skills to adjust practice in their non-AP courses to implement the standards.

Summary

Teacher learning takes place through participation in CoPs. This Chapter developed descriptions of how teacher learning evolved for three teachers in response to the CCSS. Three constant themes emerged from the analysis of data. One theme was that teachers believed the CCSS represented a demand for student learning to include intellectual work that differed in varying degree to teachers past conceptions. In response to this, teachers began renegotiating meanings of competency. Teachers wanted to learn how to facilitate this type of learning in students and how others around them (colleagues, administrators, and students) would view their changed practice. Teachers were also mindful of the role assessment and accountability played as they implemented the CCSS. Teachers' sense making took shape not only in the immediate environment of teachers in schools, but also as teachers operated in an accountability environment.

Teacher learning in a series of designed CoP professional development meetings took place so teachers could learn the "official" district vision of CCSS implementation. The "unofficial" visions of actual changes to shared practice were situated in each local school context. Norms of interaction differed between the two schools. At Burt, teachers value learning with colleagues, however their practice and identity are not dependent on CoP participation. There were no consistent supports such as time in place to foster teachers learning through social interactions. The school culture at Burt played a gatekeeping role which may have slowed changes to teachers practice. At Spartan, norms of interaction were in place that supported teachers learning in CoPs. Teachers had supports through consistent time provided to learn

socially, and established traditions of meeting beyond provided time. Norms of interaction among the U.S. History CoP included tinkering with curriculum to implement the CCSS which might have slowed changes to teachers shared practice.

CHAPTER 6

High School Administrators Influence on Teacher Learning in CoPs

A second purpose of this research was to describe the roles that high school principals and assistant principals (administrators) assume to encourage teacher learning in CoPs. Wenger (2002) stated that the "…health of CoPs depends primarily on voluntary engagement and emergence of internal leadership" (p 12). Research demonstrated that though administrators are not members of CoPs providing leadership from within, there are key roles they may enact to encourage teacher learning in CoPs. These roles often fall into four categories as described in Chapter 2 as (a) goal setting, (b) instructional leadership, (c) leading collaboration, and (d) holding teachers accountable to meet goals (Coburn 2001 & 2003; Printy, 2008; Stein & Nelson 2003; Yong, 2006).

This research intentionally focused on high school administrators and was designed to contribute to the narrative describing how high school administrators' roles have historically evolved, and include cultivating teacher learning in CoPs. Administrators have been seen as managers and supervisors. The demands of caring for the physical plant of large high schools, supervising more than 100 staff members and 1500 students may detract high school administrators from assuming roles that encourage teacher participation in CoPs. As research demonstrated a link between administrator and student learning, administrators include practices that cultivate teacher learning (Horn, 2002). High school administrators are less well represented in research than elementary and middle school peers. Often times, perspectives of teacher leaders, instructional coaches or department heads dominate the research literature. Data in this chapter comes for the most part from principals and assistant principals, with interview data from

teachers used where appropriate to illustrate themes further. This study tries to fill some of that gap in collecting data from high school principal and assistant principals and addresses research question four:

- What roles do high school principals and assistant principals play to encourage teacher learning in communities of practice?

The question of roles comes from the notion of role enactments and expectations that teachers have of administrators rather than from formal positions. Because of this, upcoming sections are organized by key roles that support teacher learning in CoPs. Three key themes emerged from the research: (a) the role of leaders' beliefs about social learning and interaction; (b) the role of providing structural supports that broker collaboration; and (c) strengthening or weakening teacher ties to CoPs.

Administrator Background Information

The Spartan principal was in his second year as high school principal at the time of the study. Prior to being a high school principal, he was an elementary teacher, high school assistant principal (at Spartan), and elementary principal. The assistant principal at Spartan was in his second year as an assistant principal at the time of this study. When he was a teacher at Spartan, he was a member of the same U.S. History CoP of which Elise and AJ are a part. Because of his unique perspective of having been a teacher himself in the CoP under study in this research it should be stated that the data from the assistant principal at Spartan was highly distinctive to this study. He also was an athletic coach at Spartan before becoming an administrator. He recently completed his master's degree in educational administration.

The principal at Burt High School had been a science teacher for seven years at both the middle and high school levels. He had been in high school administration for 14 years, assistant

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principal for 12 years and principal at Burt High School for three years. His undergraduate and master's degrees are in biology and his educational specialist degree is in administration leadership. The assistant principal at Burt High School was a teacher for 17 years before becoming an administrator. She taught both English and social studies from the lowest level of basic classes to AP classes. She has been in administration for eight years and held positions as assistant principal in two high schools and as secondary curriculum coordinator. Her undergraduate degree is in secondary education, English and American Language and Literature, and History. She has masters of Liberal Studies in American Culture, and a Masters of Arts in the Art of Teaching. She also is working on her education specialist's degree and has her administration certification.

Administrator Beliefs about Social Learning and Interaction

Wenger (2002) asserted that "Once designated as the keepers of expertise, communities should not be second-guessed or over managed" (p. 12). Beliefs that administrators have about social learning influence who they "designate as keepers of expertise." Principals at both research sites varied in their enactment of "designating" CoPs as "keepers of expertise" that may be related to their beliefs about social learning and interaction.

One way that administrators in this study designate CoPs as keepers of expertise is by setting goals for teacher learning and work that supports teachers learning through social interactions to meet the goals of the organization. Administrators who believed that teachers learn through social interaction establish goals for teacher learning and work that could influence mutual engagement, joint enterprise, and shared repertoire of communities. Designation also took place when administrators acted in ways that supported teacher learning in CoPs. These goals, beliefs, and actions legitimized teacher participation in CoPs as a form of learning.

Interview questions used in this study provided data that demonstrated how administrators structured teacher learning. Beliefs that administrators had about teachers learning influenced how they structured teacher learning. Administrators, who believed teachers learned from one another through social interactions set goals for teachers' work, established conditions and acted in ways that promoted these conditions. Administrators who believed teachers learned from considering issues of school culture set goals for teachers' work, established conditions and acted in ways that promoted these conditions. The four administrators participating in the study were asked what communities existed in which teachers learn. Administrators also were asked to describe their beliefs about teacher learning in general. Is teacher learning a social activity or something that takes place individually? Data provided from administrators demonstrated differences between administrators at the two schools.

Research has shown that teachers need time to "develop, absorb, discuss, and practice new knowledge (Garet et al., 2001), meaning that professional learning opportunities need to be sustained and intensive. When the activity is "school based and integrated into the daily lives of teachers" (Odpfer & Peder, 2011), and when learning is active and presented in a way that models how teachers should teach students, teacher learning occurs. Data from the schools in this study affirmed that teachers were more likely to participate in CoPs at Spartan where work and learning was closely related to their practice than at Burt where school culture issues were not tied to practice.

Administrators at Spartan choose to structure teacher learning socially in course level communities by communicating clear beliefs and goals that legitimized teacher learning in CoPs. The principal communicated goals for teacher work and learning in CoPs by stating that he expected teachers who taught same courses to have similar instructional and assessment time

lines and practices. The assistant principal at Spartan supported CoP participation by discovering when teachers detoured from CoP participation and then prodding teachers to participate in joint work and learning in course level CoPs. The administration at Burt structured teacher learning by providing time for teachers to learn about and discuss school culture topics. The principal described his role as that of a source of information; someone who provided direction and facilitated conversations about topics related to school culture. The assistant principal at Burt supported teacher learning individually by meeting with teachers one-on-one. Administrators at Burt did not set goals for teacher learning and work through CoP participation. Instead, they gave teachers the choice of deciding to work and learn voluntarily through emergent, teacher initiated CoPs.

The principal at Spartan established goals for teacher joint work and learning, which encouraged teachers to learn socially from those who taught same courses. The Spartan principal believed that teachers learned in department communities where they "look at specific core subject curriculum…on assessments, strategies, just practices…" He believed teachers "that are teaching a specific area, content area, particularly new people that really need to have time to sit down with their colleagues and share and discuss and plan together." The principal stated that he could be the type of instructional leader who "stood in front of the staff and provided information about research-based instructional strategies." However, he did not use this approach as an instructional leader because he believed teachers should learn from one another. The Spartan principal stated beliefs and goals for teacher learning and work that demonstrated he valued teacher learning from one another through social interaction, which both encouraged and legitimized CoP participation. The Spartan principal actively communicated his beliefs in the

formation of teacher communities to develop similar instructional timelines and assessment so

students had equitable experiences in a course:

> We are constantly trying to develop what I would call a true PLC (professional learning community). I don't think we have it but I think we do a better job having common practice, having common assessments, trying to have common instructional timelines if you will. Within certain courses that we teach. ….I think that we need to continue to push the envelope that this is an expectation and that there is benefits to kids…And I think that we owe it to kids that they are going to have similar experiences when they sign up for a course. I don't expect everyone to have the same teaching style. They should expect that we are going to cover the same content that there is going to be a similar experience with regard to their growth within that academic selection. They should be assessed on the same material. Those are the components that we as administrators have to keep… pushing because it is so easy for teachers to want to just do their own thing…but I don't think that services kids. I think kids and parents should come to expect that regardless of what teacher you have, the same content, same assessment, same instructional activities are going to be part of the mix and there shouldn't be huge differences. Because then I think kids are getting unequal, there is an inequity in what kids are receiving. We need to be equitable across the board if we can. That is our role, to help oversee that piece and continue to grow it. And it is a struggle because we get teachers who want to do their own thing…

The principal's goals and beliefs that teachers should provide an equitable experience in

instruction and assessment for students guided the joint enterprise, mutual engagement, and

development of shared repertoire among CoPs. He communicated specific expectations for

participation in CoPs that may shape mutual engagement in course CoPs. Because his

expectations included teachers developing common instructional timelines and assessments, he

encouraged COP participation among teachers who taught the same courses. He stated that when

similarities existed in instructional timelines, assessments, and teaching strategies, then equity in

student learning resulted. Teachers' joint work to develop common instructional timelines and

assessments was given legitimacy as a form of teacher learning because the principal stated it as

a goal. Because of this belief, he structured teacher learning by providing consistent time for

teachers to meet with other teachers who taught the same course. He encouraged teachers to

work together in their content areas during building professional development time. The principal also influenced the shared repertoire of CoPs when he shared goals that teachers should develop and adhere to common instructional timelines, assessments, and practices. These goals signaled teachers that they should develop common pacing of units and assessment. Bringing commonality to courses could result in teachers developing shared language, and practices.

The principal of Burt High School described his role as one that included being a source of information, giving direction, and setting the tone to allow teachers to investigate avenues for their own learning around issues of school culture. He believed that teachers were looking for information, direction, and expertise from him. He said teachers also needed reassurance and approval to experiment and try new things. Here, he elaborated on these beliefs:

> I would say as a teacher you would want your admin to answer questions, provide some direction and maybe some steps or agenda to get there. Teachers just want to know the end result. Where do you want me to be, what do you want me to do. Give me a target. Whether it is the end of the year or the end of that meeting. Teachers just want that direction.

He also described his role similar to what David described as he structured professional development time. He believed that part of his role was structuring professional development, setting topics of discussion, and guiding teachers through discussions by providing them with focus questions. When asked what roles the principal played in cultivating teacher learning, both Kate and Dave reported that the principal in general set the direction for teacher learning by posing topics about school culture issues to the staff. For example, David described how recent topics at professional development were questions about developing a building-wide cell phone use policy and presenting thoughts on the use of homework as a student learning tool. PD at Burt was structured as a time when teachers met as a whole staff, and then often broke into smaller groups to discuss a variety of topics presented to teachers by the principal.

Just as at Spartan, the Burt principal's beliefs about teacher learning and how he structured and supported teacher learning resulted in setting the direction for teacher work and learning. The principal at Burt approached teacher learning as an opportunity to pose issues of school culture to the staff. David reported that the result of this approach was some teachers would be interested in learning more about the topics. In general, teachers were "trusted" to assume responsibility for learning about the topics if they chose. As in the narrative, some teachers formed CoPs to learn more about the topics posed, while other teachers felt they did not need further learning. The Burt principal set goals for teacher learning and then facilitated conversations to allow teachers to make sense of the topic at hand. Teachers might have formed CoPs for time periods to work toward the principal's stated goals (the duration of a staff meeting or longer if the teachers choose). Both David and Kate stated that the building-wide PD was not connected to the actual practice of teaching. David believed he took something away from every building PD, but he was not actually taking something that could be implemented in his classroom.

These practices resulted in reinforcing more traditional norms of high school teacher work and learning that existed among high school teachers at Burt. More traditional norms of work and learning could be thought of as the "event-based PDs," as described by the Spartan assistant principal. Teachers listened, complied with administrator requests, and got through the PD without much interaction. As stated by David, he took something away from each building PD but not something related to the practice of teaching or that could be implemented in his classroom.

Tie Strength between CoPs

The Spartan principal's actions strengthened ties between district and building CoPs. He communicated strong beliefs in teachers' joint work and learning that served to legitimize CoP participation. Teachers were provided time to work and learn with content area CoPs during building PD time to bring instruction and assessment commonality between teachers. Teachers at Spartan in the U.S. history CoP were learning about the CCSS in at least one (Elise) and two (AJ) other designed CoPs in which they were members. Though the principal did not explicitly state that teachers should implement CCSS into social studies pedagogy, teachers in the U.S. history CoP began integrating the CCSS as they were provided time to meet together. Therefore, teachers had the opportunity to integrate the learning that took place in the district-wide and teacher leaders' CoPs at their school level.

By focusing on school cultural issues during PD time, the principal at Burt did not strengthen ties between the district social studies, teacher leaders, and building CoPs. Teachers at Burt got messages from the district social studies CoP, social studies consultant, and teacher leaders' CoP that making sense of and implementing the CCSS was important. When the principal at Burt chose to focus on issues of school culture unrelated to the joint enterprise of other communities teachers participated in, he weakened ties between CoPs in which teachers were learning about the CCSS.

Providing Structural Supports

The Spartan principal believed he had a responsibility to provide structural supports in the form of time for teachers to meet during building professional development time, to work toward his vision of an equitable course experience for students. Teachers could depend on having time at least once a month to meet with their course level CoPs. Patterns of CoP

participation that took place for teachers to meet this goal were defined locally by each course level CoP. For example, the principal provided building professional development time for course level CoPs to meet, but the Spartan U.S. history teachers also chose to meet before every unit. These meetings took place after the school day ended, lasted "as long as they needed to" according to Elise, and were outside of the teachers' workday.

Though the principal set goals for teacher joint work and learning, not all CoPs at Spartan had the same joint enterprise in working toward the goals. As described with the Spartan U.S. history CoP, some communities already were engaged in the type of joint work described by the principal. Though none of the teacher participants cited creating an equitable experience in U.S. history classes as a purpose of their work as the principal stated, the community was involved in creation and maintenance of common instructional time lines and assessments. Data from participants showed that other CoPs struggled with goals set forth by the principal. Elise stated that government and economic teachers at Spartan were not engaged in the same level or forms of joint enterprise as the U.S. and world history teachers. This raised a question about how much impact the principal had to influence teacher CoP participation. Both Elise and AJ found participation in the U.S. history CoP valuable to their sense making and development of shared practice. Both teachers sited the CoP as a group where they posed problems of practice and developed shared solutions. The principal's influence to participate in CoPs may have been stronger with teachers who valued CoP participation as part of their learning.

The Burt principal provided structural supports for teachers to learn through social interactions during building staff meetings. Administrators and teachers described building PD time as focused on issues of school culture. Teachers could choose, and were trusted to decide if they want to form CoPs to continue learning. Two teachers from Burt stated that building PDs

were not linked to their instructional or classroom practices. After staff PD, departments sometimes had time to meet and discuss issues of school culture further. Kate described this department time as more valuable to her as she did not feel comfortable learning with the entire staff at "random tables." The Burt assistant principal acknowledged that not all staff members participated in learning during building PD because they needed time to process information before they could participate in discussion with peers. Burt administrators provided structural support for buddy teacher partnerships by assigning departments the same lunch period. Teachers could choose to meet during lunchtime. David described meeting with department peers during lunch. The principal at Burt described how common department lunches had created what he calls "cultural silos":

> Burt is one of the few schools that I have been in that does not have a common staff lunchroom. So our staff eat by departments, they don't interact. They don't see each other informally until we get to PD every two weeks. I have had teachers at the end of the school year still ask me "who is that" and it is a new teacher that has been here the whole year... cultural silos that have been part of Burt's culture forever and it is good and bad. It has helped build really strong positive departments, but there is no interaction, there is no knowledge of what their colleagues down the hall or across the building are doing. And it has created department areas. They don't even know what the other departments are doing because they don't interact. So we have intentionally built our lunch schedule around departments so all of the math and science teachers eat together…So that is, institutionally we have set that up and allowed that to continue.

As the principal described, providing structural supports could have positive and negative consequences. Because the principal provided common lunchtime where teachers could meet, he could structure staff PD time in ways that encouraged interaction between staff members who did not typically work and learn together.

Assistant Principals Instructional Leadership and Influence on Tie Strength

Data from the assistant principals demonstrated how their one-on-one interactions with teachers influenced teacher participation in CoPs. The assistant principals at both schools

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influenced tie strength between teachers and their participation in CoPs. Chapter 2 outlined

research in which Printy, Marks, and Bowers (2009) described integrated leadership when they

partnered instructional and transformational leadership. In their research they found the

importance of both principal and teacher leadership in "establishing the kinds of relationships

that are conducive to improving instructional quality and creating conditions that support

academic progress of all students" (p. 529). Interview data demonstrated that both assistant

principals cultivated relationships with individuals and groups of teachers. These relationships

allowed assistant principals and teachers to communicate candidly in situations when teacher

learning may be stalled or floundering. The assistant principals responded differently, which may

have strengthened or weakened tie strength between teachers and CoPs.

The assistant principal at Spartan was a member and leader in the U.S. history CoP with

Elise and AJ. Thus, his views had a particularly up close and personal basis. Just as the principal

at Spartan, the assistant principal believed that teachers needed time together to learn from one

another. He stated that teachers needed time to learn from their peers instead of through "event

based" PD:

> [We should] allow teachers to see what other teachers are doing in their
> classrooms. Allow teachers to share what they are doing in their classroom.
> Giving that time for teachers to shine and allowing teacher see what other
> instructional practices are out there. Most times, in districts today we have these
> event-based PD's where we are prescribed what we are going to do. So we walk
> in there and we are going to do a 90 minute prescribed, event-based PD and
> teachers do a really good job at… playing the role of I will sit here. I will be quiet
> and listen to what you say but then get me out of here. There is not a lot of
> interaction.

In Elise's description of the role that the Spartan assistant principal played to cultivate

teacher learning, she highlighted ways in which he encouraged learning of the U.S. history CoP:

You can tell he [the Spartan assistant principal] likes to "come home" and ask what is going on…he pushes and propels us to collaborate. He was one of the founding fathers of collaboration in our department and I think he still wants to make sure it is happening. He really motivates and challenges us to not fall off track or if he notices that we are starting to get locked and go off in our own ways he will be like "ok guys how it is going?" and we are like "ok guys we have to go back". So…he keeps us on track.

Elise described how the Spartan assistant principal acted as a corrective force by pushing the collaborative work of the department members forward when he perceived the CoP is "getting locked." Not only does he believe in teachers' social learning, but because of his past membership in the U.S. History CoP he was uniquely positioned to perceive when the U.S. history COP members are "getting locked" and prodded individual members of the CoP to keep joint work and learning at the forefront of their practice. He discovered teachers were getting locked through conversations he had with individual members of the U.S. history Co. They expressed concerns that conditions were changing, signaling an impending "lock" to him. He was once a member of the U.S. history CoP, which did not guarantee he still maintained positive relationships with community members, but based on Elise's interview data seemed true. The Spartan assistant principal stated that his relationships with teachers allowed them to divulge when the community was "locked." He believed teachers in the U.S. history CoP trusted him, leading them to signal times when the community was "locked." When these conditions were apparent (usually through teachers complaining about colleagues), he had individual conversations with members of the U.S. history CoP to motivate them to work and learn together. His practice of talking with the U.S. history teachers and encouraging them to collaborate could serve as a corrective force to strengthen ties between teachers in the U.S. history CoP. Wenger (2002) stated that CoP participation should be voluntary for the health of

the community. As the assistant principal encouraged teachers to learn and work together, he could be lessening the voluntary nature of CoP participation.

The assistant principal at Burt High spoke about differences in teachers' learning styles, and how these differences prompted her to meet teachers' individual learning needs. The administrators at Burt generally approached teacher learning in two ways: through PD so all teachers could hear the same message, and individually so that teachers could gain comfort and confidence with the topics. She worked one-on-one with teachers who developed questions after building PD. She did this by meeting with teachers in person or answering questions through email. She provided personal feedback to teachers in the hopes of building their confidence. She did a lot of clarifying about "…this was the old model, this is the new model, and this is where you need to be going." She described how they used breakout sessions after staff PD so that learning occurred as a whole staff, and then among smaller groups. She perceived that it was not easy to get individual feedback from teachers in large group settings because there were some teachers who felt threatened or not confident to ask questions in front of the whole staff. She mentioned personal characteristics of teachers who were not "comfortable in their own skin to bring something forward" during staff PD where teachers expressed opinions on topics such as homework policies. She also mentioned other personal characteristics of teachers, such as those teachers who needed time to process the topics before expressing opinions; how the topics affected them or their students, and how to apply the topic in their classroom or with their students before they could express their opinions to the staff. The assistant principal spent time going back and having "that one-on-one communication and in many cases it is a sense of reassurance that they are doing the right thing or at least problem-solve privately and in some cases be more empowered to lead their particular group."

Summary

Data from Spartan and Burt High School principals indicated that they set goals for teacher work that influenced CoP participation. By setting goals, the Spartan principal influenced mutual engagement, joint enterprise, shared repertoire of CoPs, and legitimized teacher learning through social interactions. The Burt principal approached teacher learning by addressing school culture issues during building-wide PD. Teachers participated in event-based PD to consider issues of school culture. Teachers then chose to form emergent CoPs voluntarily to continue learning about topics posed during PD. Assistant principals at both research sites developed relationships with teachers that allowed them to influence ties between teachers and CoPs. The Spartan assistant principal used his relationships with teachers in the U.S. history CoP. As he talked with teachers, they signaled him when community members needed him to apply corrective force to motivate participation in their CoP. The Burt assistant principal used her relationships with teachers to provide one-on-one learning for issues about which teachers inquired. This process could have both strengthened and weakened teachers' propensity to work and learn socially.

Discussion of Research Question 4

The second purpose of this research was to address research question 4: what roles high school principals and assistant principals played to encourage teacher learning in communities of practice (CoPs)? Chapter 6 presented data from high school principals and assistant principals (administrators), which demonstrated administrators acted in ways that encouraged teacher learning in CoPs. Four key themes emerged from the research: (a) administrators beliefs about learning through social interactions that influenced how they structure teacher learning; (b) administrators provide structural supports which encourage CoP participation; (c) principals

influenced tie strength between CoPs when they structured teacher learning that compliments learning in other CoPs; and (d) assistant principals supported teacher learning in ways that may strengthen or weaken ties between teachers and CoPs.

Summary of Major Findings

Principals' beliefs about teachers learning through social interactions that took place in CoPs influenced how they structured teacher learning. Data in Chapter 6 demonstrated that when principals believed teacher learning was a socially situated activity, which took place as teachers interacted in CoPs, they structured teacher learning accordingly. Principals, who believed that learning was socially constructed, established goals and expectations for teachers work and learning that encouraged teacher CoP participation. When principals set goals and expectations for teachers' social learning, which was complimentary to learning occurring in other CoPs in which teachers participated, leaders strengthened the ties between the CoPs. Principals also provided structural supports in the form of consistent time for teachers to meet with CoPs and allowed time for teachers to learn through social interaction about topics that encouraged CoP participation. Data from Chapter 6 demonstrated that assistant principals influenced tie strength between teachers and CoPs in which teachers participated. Assistant principals formed relationships with teachers through one-on-one interactions that allowed them to communicate their learning needs. The ways in which assistant principals met learning needs had varying influence on tie strength between individual teachers and CoP participation.

Principal Discussion

In research on CoPs, Printy's (2008) stated:

> … leaders [should] balance designed and emergent qualities of communities of practice to capitalize on the learning and innovation that is the promise if teachers' communities of practice. To do so requires that formal leaders acknowledge, support, and integrate [CoPs] into the school operation without

disrupting the informality, collegiality, self-organization, and internal leadership that are critical to their learning and innovative capacities (p. 218)

Findings from this research provided insights into how balance between designed and emergent CoPs was maintained to capitalize on learning. Data from Chapter 6 demonstrated that the principal from Spartan demonstrated beliefs and set goals for teachers' joint work and learning that were consistent with beliefs that teachers' learning was situated in social interactions. Data indicated that the Burt principal decided to structure teacher learning to address issues of school culture during the year this study took place. Teachers from Burt found these topics interesting, but not connected to classroom practice in any way. Because of this, the way in which the principal at Burt structured teacher learning was not seen as connected to teachers' practice.

When principals make decisions about structuring teacher learning in designed and emergent CoPs, they should consider the capacity that teachers have to learn about certain topics given what they are learning in other CoPs in which they participate. While school culture issues might have been important to address, teachers who were engaged in several other designed CoPs focused their work and learning on implementation of the CCSS did not view Burt PD as connected to their practice. Teachers from Burt were participating in several district level designed CoPs where they learned about the CCSS, and were implementing the standards. The choice the principal made to address issues of school culture was perhaps too far outside the teachers' realm of consideration given the work and learning they were doing in other CoPs. Coburn(2001) found something similar in her research on reading policy implementation: when administrators structured "assignments" on topics teachers did not consider related to their classroom practice, "teachers often found it difficult to see the connection between other activities and the work they are doing in their classroom (p. 158)." Coburn found as a result of

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this disconnect between teachers classroom practice and activities teachers shifted toward "out-facing" conversations and "completed tasks to please the administrators" (p. 158). However, when teachers talked with colleagues in emergent CoPs, they chose to talk about matters related to classroom practice (in-facing conversations). In some cases, the in-facing conversations resulted in "multiple, incremental, consistent changes in classroom practice related to teachers interaction with their colleagues around messages about reading" (p. 159). It was possible that if the Burt principal at timed the school culture discussions to be less incongruent with the work and learning teachers were doing in other CoPs, the outcome of addressing issues of school culture such as homework policies might be different. Teachers may have responded to the school culture issues through more in-facing conversations, seeing these issues as related to their practice.

Balance also should be found as principals considered how to meet the learning needs of teachers when they work and learn in designed and emergent CoPs. One role that administrators could play to encourage CoP participation was by enacting the role of instructional leader. Instructional leaders focused teacher learning on instruction and structured teacher learning around instructional matters (Printy, 2008). Coburn (2005) found that principals should be active participants alongside teachers through the sense making process. She stated that principals' interpretations of policy messages influenced how teachers came to "understand and enact messages (p. 491). Data from this study demonstrated neither principal explicitly structured conditions, stated expectations, or set goals for teacher work and learning that signaled their vision or sense making of how teachers should implement the CCSS.

One reason principals may have made the choice to not dedicate building PD time explicitly for CCSS integration is because they believed district professional development time

would coordinate implementation of the CCSS. Administrators were asked what they believed the district's plan for CCSS implementation was: two administrators replied that they were not aware of the plan; another said the plan needed to be developed more; and the fourth that the plan included learning through district professional development, the intermediate school district, teacher leaders, and during department common lunches. Given what research has found about the importance of the role principals play as instructional leaders and in co-constructing meaning of policy messages (Coburn, 2005 and Printy, 2008), this may have been an oversight on the part of the principals. More integration of the CCSS during building PD time would have provided teachers opportunities to make sense of and implement the CCSS within the situated learning which takes place in their local school context. Data demonstrates that neither principal acted as instructional leaders in regard to CCSS sense making and implementation with teachers beyond providing structural supports such as time to meet.

Another reason principals might not have shared their vision and engaged in sense making with teachers as instructional leaders is that they believed structuring learning conditions is the extent of their role to foster teacher learning in CoPs. Research has shown that effective instructional leaders focus teacher learning on instruction (Printy, 2008; Stein & Nelson, 2003). Teachers at Spartan did view the principal and assistant principal as leaders who believed in and promoted CoP participation. They did not; however view administrators as instructional leaders beyond providing goals and time to meet. Elise described how administrators supported collaboration:

> I would say that they really foster a collaborative group.... So they allow for time for us to get together. They see that need for importance. They are kind of the guiding light in a way. They say ok here is what you guys need to do; here is what our end product needs to look like. Now you guys go back into your caves and figure that out

AJ described how administrators provided time, but that there was sometimes disconnect between goals for teachers work during PD time and conflicting objectives:

> For the U.S. history the learning in the actual content area I personally felt that they have not had a lot of influence in those things. They might give us time and say 'you need to achieve this objective and they have an objective' but a lot of the time there is a disconnect between that objective and actually what we need to accomplish within our classrooms.

The Spartan principal provided building professional development time for teachers to meet in content groups to develop common instructional timelines and assessments. He structured teacher by providing time for teachers who taught the same course to meet during building PD. He made these decisions based on his beliefs about how teachers learned and knowledge about his specific school context. Interview data showed that when asked what he believes teachers needed in order to successfully implement the CCSS, he stated that teachers needed more time with each other. He did not believe it is his role to be the source of knowledge for content specific instructional issues as evidenced by his second interview data.

Assistant Principal Discussion

This study showed that assistant principals supported teacher learning in ways which may strengthened and weakened ties between teachers and CoPs. Printy, Marks & Bowers (2009) found that it is important for principals to "establish the kinds of relationships that are conductive to improving instructional quality... (p.529)" Instructional leaders used knowledge of teachers' individual abilities, strengths, and weaknesses to personalize learning. Printy (2008) found that instructional leaders gain knowledge of reality of instructional practices in the school to keep teachers focused on instruction. She described how as instructional leaders, administrators understood group and social dynamics of teacher and structure encounters among groups which may lead to teacher learning.

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The Spartan assistant principal had knowledge of group dynamics which existed in the U.S. history CoP because of his past membership in the community. He developed relationships with teachers which allowed teachers to trust him with information signaling that the community may need prompting because they are "getting locked". When he detected the community needs prompting he acted in ways which served as a corrective force to motivate teacher CoP participation. In the context of this community, "getting locked" may mean some form of conflict. Past research on CoPs demonstrated that conflict was often central to community participation (Achinstein, 2002; Grossman, 2001; Hargreaves, 1994). Wenger (1998) included in his description of practice the activities that provided resolution to conflict. Mutual engagement required community members had trust in one another to address conflict if it arises (Wenger, 2007). Achienstein (2002) found that CoPs which handled conflict successfully had more potential for sustained development. Teachers in the U.S. history CoP may rely on the corrective force provided by the Spartan assistant principal as a way in which they navigate conflict. His prior relationships with members of the CoP allowed him to act as a corrective force "without disrupting the informality, collegiality, self-organization, and internal leadership" (Printy, 2008 p. 218)

The assistant principal at Burt possessed knowledge about teachers' individual abilities and worked with teachers one-on-one to help meet their learning needs. This practice may either strengthen or weaken ties between teachers and CoPs in which they are members. Teachers may gain confidence in their abilities to implement the CCSS from their learning with the Burt assistant principal. Depending on the individual teacher, confidence may change their level of CoP participation. If the teacher was a peripheral member of the CoP they may become an active or core member based on their newfound "expertise" and ability to contribute to the learning of

other members of the CoP. Teachers may also decide that as a result of the sense making they engaged in with the Burt assistant principal they can decrease their participation in CoPs which would lesson tie strength. These teachers may come to view the assistant principal as a source of knowledge instead of participation in work and learning with other teachers in CoPs which may exist in the school community.

The Burt assistant principal also engaged in the sense making process with teachers, which Coburn found influenced how teachers make sense of policy messages (Coburn, 2005). Printy (2008) also found that when leaders engaged in sense making "this move shifts the leader from a focus on external legitimacy, such as promoted by accountability and standardized testing, toward the enterprise focused on learning about teaching as complex work (p. 217)". Engaging in sense making with teachers allowed the assistant principal to "authentically take part in teachers' community of practice meaning-making activities (Printy, p. 217)". Her practice of meeting with teachers to engage in sense making about the CCSS was how she supported teachers without "disrupting the informality, collegiality, self-organization and internal leadership (Printy, 2008 p. 218) to meet the learning needs of teachers.

CHAPTER 7

Conclusions and Implications

Past research demonstrated how teachers learned through social interaction in both designed and emergent communities of practice (Achinstein, 2002; Bidwell & Yasumoto, 1999; Cobb et al, 2003; Coburn, 2001;2008, Grossman, Wineburg & Woolworth, 2001; Hord, 1997; Horn, 2005; McLaughlin & Talbert, 2001; Printy, 2008; Young, 2006). Dan Lortie (1975) portrayed the teaching profession as one of isolationism. His research found that the way schools are organized creates an "egg crate" like systemic seclusion which was the anthesis of community of practice (CoP) participation. Research over the past forty years since demonstrated that the teaching profession was not as insulated as Lortie's research found. The structure of teachers work lives in schools today is fundamentally still as it was when Lortie conducted his research: teachers still teach individually in a classroom with students. However, Past research on the work lives of teachers and the present research show teachers learning is situated in social interactions. Researchers have shown how teacher learning takes place in designed CoPs (Horn, 2005; Kruse & Seashore Louis, 1997; Grossman, Wineburg, and Woolworth, 200) and through participation in emergent CoPs (Horn & Warren Little, 2009; Coburn, 2001 & 2005; Printy, 2008).

This study addressed how teachers' participation in CoPs influenced learning. This study showed the geography of teacher learning: where teachers learned, who they talked to and where they situated their learning included numerous social interactions. Teachers in this study learned through both designed and emergent CoP participation. Each individual teacher demonstrated a pattern of CoP participation unique to them. One conclusion that can be drawn from the uniqueness of each teacher's pattern of CoP participation is to consider whether teachers choose to participate in certain CoPs because they are avoiding change or because the CoP helps them

respond to change by providing a group for them to continually negotiate meaning, practice, sense making, and identity. Teachers may choose CoPs because they propel them to learn or they comfortably insulate them from change. Teachers may consciously or unconsciously make these choices. It is one responsibility of the school administrators to notice when teachers may choose CoP participation because they are defending themselves against learning. Administrators should have the sense of learning taking place in all CoPs and structure increased or decreased accountability measures such as specific goals to prompt teacher learning toward change. Internal CoP leadership being capable of prompting change orientated learning may be more effective than outside pressure from administration. Some leaders inside CoPs may not feel comfortable to challenge traditional roles of the community and prompt learning. At that point they may signal to administration that the CoP needs external prompting to move toward desired learning. Implications of this finding are that it is incredibly difficult to standardize teacher sense making, or practice. Standardization can be viewed negatively by teachers and administrators in the current education system. The CCSS are an attempt to standardize learning across the country. Without time, support, and resources dedicated to sustaining teacher learning in CoPs there is little chance that the CCSS will have its intended effect.

Some teachers in this study engaged in making good faith attempts to respond to demands of their work, while others engage in activities which avoid embracing new learning as a self-defense mechanism. Participants from this study engaged in both types of behavior. An important conclusion is that while teachers negotiate meaning in CoPs about how to integrate the CCSS into their pedagogy, they may enact roles which reinforce traditional norms of interaction among the community and slow down or stop the rate of change. As teachers engage in familiar dialogues with often long established relationships with colleagues, they may fulfill a cyclical

process of little to no learning or changes to pedagogy. Another conclusion is that if teachers tinker with existing materials and objects used to facilitate student learning about the CCSS the rate of change to pedagogy or implementation of the CCSS may be slow. As teacher reify objects currently in use rather than create object in response to the CCSS, they may also be slowing down or stalling changes to pedagogy.

Another conclusion that can be drawn as a result of this study is that teachers have online CoP available to them in order to meet learning needs that might not exist in their schools. Online CoPs provide teachers learning opportunities free of the traditional roles and power relationships which may exist within CoPs in schools. Teachers choose to participate in online CoPs for a variety of reasons and this learning may allow powerful access to ideas and ways of thinking not available in schools.

Past research had demonstrated that school leaders enacted roles which influenced teacher learning in CoPs (Coburn, 2001; Printy, 2008; Stein & Nelson, 2003; Young, 2006). From the leadership perspective this study demonstrated that administrators and teachers in leadership positions influenced teacher learning in CoPs. This study provided insight for anyone contemplating how to structure high school teacher learning. Leaders must possess deep understandings about the CoPs which exist in schools: membership in CoPs; leadership roles; sense making; shared practice; and changes to student learning and assessment being contemplated by members. Leaders may introduce new practices but structuring teacher learning is much more complex than a single communication and expecting sense making or shared practice to change. When administrators want to structure teacher learning they must do so with consideration to the multiple CoPs which will change and adapt the practice in various ways. Leaders have to constantly steer teacher learning in ways which are not too disruptive to the

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learning taking place in CoPs. This can be challenging because leaders are not members of teacher CoPs but they can influence learning in CoPs.

This study showed that in order to steer practice, leaders needed to foster communication channels with teachers' CoPs so they could develop insight into learning taking place. I use the term leader here because David steered teacher learning perhaps more than administrators in this study. It may seem unreasonable to ask leaders of large high schools to develop this type of intimate knowledge about teacher learning, but it is necessary. Administrator and teacher leaders who listen carefully to the learning needs and wants of teachers can structure teacher learning which is supportive to CoP participation. Full and detailed knowledge of teacher learning in CoPs will also help leaders determine when teacher learning needs more or less structure. This knowledge would also help leader's structure interactions between CoPs when necessary. This study showed how assistant principals played key roles in forming communication between administrators and teachers learning. Teams of administrators collectively focused on understanding CoP learning dynamics in high schools to structure teacher learning will be more effective than a solitary effort. School leaders who are constantly communicating with teachers can re-communicate their vision of the practice or message, help teachers make sense of the practice within the context of their content, and alleviate fears about lack of resources, funding, and possible accountably sanctions for lack of student performance.

High schools are often complex organizations in which many CoPs exist. High school administrators balance meeting learning needs of individual teachers, subject departments, content groups, and other social learning arrangements which many exist in each school. Principals who believe teachers learn through social interactions situated within the context of their schools meet teacher learning needs by structuring time for teachers to interact. However,

this study suggests that principals also should enact the role of instructional leader by doing more than supporting teacher learning in CoPs through structural conditions. Instructional leadership also involves principals focusing professional development (PD) time on issues closely related to instruction. By doing this, teachers will see PD time as related to their practice.

Recommendations for Future Research

Several recommendations for future research were identified by the researcher. This study took place in a high performing school district and included teacher participants who were all Advanced Placement (AP) teachers. Studies similar to this could be conducted in communities where student performance varies and include a range of teachers from those who teach remedial to advanced courses. This study also included only social studies teachers. Past studies on high school teachers and CoP learning has included other subject areas (Grossman & Stodsky, 2001; Horn, 2005; Printy, 2008). It is possible that samples which include teachers from subjects which vary from social studies (science and math) may show different results.

Additional research could take place in order to understand how CoP participation influences teacher learning and use observational data in order to describe teachers learning in communities. In addition, other methodological choices to include quantitative measures of teacher learning as they related to CoPs in which teachers learn would help establish how social learning influences teachers sense making, shared practice, and identity. Another recommendation is to re-produce similar research into how CoP participation influences teacher learning on a large scale. This study is a case study looking at two high schools, five teachers, and four administrators. The results are not generalizable because of the small sample size and chosen methodology. A study with a larger sample size and sophisticated sampling techniques might produce further understandings about teacher learning in CoPs. Finally, future research

could focus on reasoning behind administrative actions and how they view their roles as instructional leaders. The underlying beliefs administrators hold their roles and how teachers learn and administrators' roles to support teacher learning may influence how administrators structure teacher learning.

APPENDICES

Appendix A
Written Consent Forms

High School Teacher Learning in Community of Practice Contexts

CONSENT FORM

The purpose of this research study is to determine what affect the various communities of practice which high school English teachers belong to affect teacher learning. Of particular interest in this study are the leadership practices that principal and assistant principals use to affect teacher learning in communities of practice. Your participation in this study will involve several in-depth (up to one hour) audio taped interviews in which we will discuss the teacher learning in communities of practice as the Common Core State Standards are implemented in your school. Your participation will also involve at least one observation of you as you engage in activities you feel are related to teacher learning in communities of practice. These interviews and observations will be negotiated to fit your schedule and needs and the needs of your school district. Copies of the transcripts of the interviews and observations will be sent to you for "member checking" and updated to reflect accuracy as indicated through the member checking process.

Participation in this study is voluntary. If you agree to participate your confidentiality will be protected to the maximum extent possible. You may decide to stop participating in the study at any time without penalty. You may refuse to answer questions if you so choose. All data associated with the study will be destroyed five years after completion of the study. If you have questions about the study or if you would like a copy of the research proposal, or final dissertation when it is finished you can contact Amanda McKay or Dr. BetsAnn Smith at the addresses, email addresses, or phone numbers below.

If you have any questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this research study, you may contact, anonymously if you wish, the Michigan State University Human Research Protection Program at 517-355-2180, FAX 517-432-4503, or e-mail irb@msu.edu, or regular mail at: 408 W. Circle Dr., 207 Olds Hall, MSU, East Lansing, MI 48824.

You indicate your voluntary agreement to participate by signing below:

Signature _____

Date _____

Name (please print)

Please sign here for agreement to have interview audio recorded:

Signature _____

Date _____

Name (please print)

Name of Researcher: Amanda McKay

Address of Researcher: 3647 Windy Knoll Rochester MI 48306
                                           Telephone 248-770-6072

                                           Email: burtaman@msu.edu

Name of Researcher's Advisor   Dr. BetsAnn Smith

Address of Advisor: 409 Erickson Hall Michigan State University East Lansing, MI. 48824

Tel. 1-517-353-8646 Email: bas@msu.edu

Appendix B
Interview Protocol (1) Teacher Interview 1
Project: High School Teacher Learning in COP Contexts
Interview:
Date:
Time:
Location:
Interviewer:
Interviewee:

The purpose of this study is to find out what how school wide, department, grade subject level and other informal COP affect teacher learning. The following questions are structured so that I can find out more basic information about you, the COP you currently learn in and what you already might know and be doing with the Common Core State Standards. After today's interview I will transcribe the interview and send you the transcription so that you may check for accuracy.

- Describe your path to becoming a teacher including how many years you have taught, different departments and buildings you might have taught in, and any special activities, or projects you are involved in that relate to school.
- When you want to learn something, do you usually work with a COP with others or individually? What is your overall philosophy of how you prefer to learn? Does your philosophy change based on what you are trying to learn?
- In your experience, what formal and informal COP do you learn in?
- When you think about the times you learn in a community of teachers, what role did the principal or assistant principals play to influence your learning?
- Think about a time you were asked to implement something new as a teacher, what COP did you work with to accomplish what was being asked of you and how did each of those groups add to or distract from your learning?
- Which COP do you do most of your learning about the following practices of a teacher: discussing curriculum, discussing and evaluating instruction, and discussion of student learning?
- What role does your principal and/or assistant principal play to influence your learning about curriculum, instruction, and student learning?

Appendix C
Interview Protocol (2) Teacher Interview 2
Project: High School Teacher Learning in COP Contexts
Interview:
Date:
Time:
Location:
Interviewer:
Interviewee:

The purpose of this study is to find out what how school wide, department, grade subject level and other informal COP affect teacher learning. Also of interest in this study is what leadership actions high school principal and/or assistant principals use that affect teacher learning as the implement the CCSS. The following questions are structured so that I can find out more specific information about the COP you currently work with and learn in and what you already might know and be doing with the Common Core State Standards. After today's interview I will transcribe the interview and send you the transcription so that you may check for accuracy.

- What activities have taken place so far this school year to help you learn more about the Common Core State Standards (CCSS)? What COP are you working with to learn more? What activities is each of these communities engaged in to learn more about and implement the CCSS?
- How would you prefer to learn about and implement the CCSS?
- How do you feel about your ability to integrate the CCSS into your current curriculum? What are some challenges you might face?
- What do you perceive may be challenges that the social studies department and grade subject level groups in the department face as the CCSS is implemented?
- Since this study looks specifically at the social studies department, tell me a little about how you perceive the social studies department and their grade level/content break downs in general handle the changes that the CCSS might bring?
- What roles do the principal and assistant principals play in influencing your learning both in COP?

Interview Protocol (3) Principal and Assistant Principal Interview 1

Project: High School Teacher Learning in COP Contexts

Interview:

Date:

Time:

Location:

Interviewer:

Interviewee:

The purpose of this study is to find out what leadership actions high school principal and assistant principals use that cultivate teacher learning as they implement the CCSS. The following questions are structured so that I can learn more about the COP you believe exist in the school; how the communities affect teacher learning and what leadership actions you might use to cultivate teacher learning in those communities. After today's interview I will transcribe the interview and send you the transcription so that you may check for accuracy.

I will begin by describing the conceptual frame under study in the research and have a copy of the framework with me to show the principal and assistant principals. After a brief overview of the way the study is framed, I will ask the principals and assistant principals the following:

- What COP do you think teachers learn in and for what purposes?
- What role do you believe leaders play in influencing teacher learning both overall and when teachers learn in COP?
- In your experience, what formal and informal COP do high school teachers learn in? How do you think about facilitating teacher learning with these two groups in mind?
- Given those communities that you mentioned teachers learn in, what role do you think you play in influencing the teacher learning in those groups?
- Overall how do you think about high school teacher learning: for example, do you consider it a social activity or individual?
- How do you think principals and assistant principals influence the learning of teacher in COP in contrast to individual learning?
- If I were to ask teachers what role the principal and assistant principals play in influencing their learning both in COP what do you think they would say?

Appendix E
Interview Protocol (4) Principal and Assistant Principal Interview 2

Project: High School Teacher Learning in COP Contexts
Interview:
Date:
Time:
Location:
Interviewer:
Interviewee:

       The purpose of this interview is to learn more specific information about teacher learning that takes place in COP as teacher prepare for and implement the Common Core State Standards. After today's interview I will transcribe the interview and send you the transcription so that you may check for accuracy.

- Describe your understanding of the plan for teachers to learn about the Common Core State Standards (CCSS).
- What learning about the CCSS do you think teachers will do and in what COP do you think they will learn certain things in?
- What COP do you think teachers already belong to where they will learn about the CCSS?
- Do you believe any new COP might assemble to help teachers learn and implement the CCSS?
- What do you think will be the biggest challenges teachers encounter when implementing the CCSS?
- When you think about teachers in your school learning about the Common Core State Standards, what COP do you imagine they will work in to learn about the standards and teaching strategies that might change due to the standards?
- Since this study looks specifically at the social studies department, tell me a little about how you perceive the department and their grade level/content break downs in general handle change to their content knowledge, core teaching beliefs, and teaching strategies?
- What do you perceive may be challenges that the departments and grade subject level groups in the department face as the CCSS is implemented?
- If I were to ask social studies teachers what role the principal and assistant principals play in influencing their learning both in communities and in groups what do you think they would say?

Appendix F
IRB Application Determination Exempt

MICHIGAN STATE
U N I V E R S I T Y

**Initial IRB
Application
Determination
*Exempt***

March 13, 2013

To: BetsAnn Smith
        409 Erickson Hall

Re: **IRB# x12-1050e** Category: Exempt 1.1
        Approval Date: March 13, 2013

Title: High School Teacher Learning in Community of Practice Contexts

The Institutional Review Board has completed their review of your project. I am pleased to advise you that **your project has been deemed as exempt** in accordance with federal regulations.

The IRB has found that your research project meets the criteria for exempt status and the criteria for the protection of human subjects in exempt research. **Under our exempt policy the Principal Investigator assumes the responsibilities for the protection of human subjects** in this project as outlined in the assurance letter and exempt educational material. The IRB office has received your signed assurance for exempt research. A copy of this signed agreement is appended for your information and records.

Renewals: Exempt protocols do <u>not</u> need to be renewed. If the project is completed, please submit an *Application for Permanent Closure*.

Revisions: Exempt protocols do <u>not</u> require revisions. However, if changes are made to a protocol that may no longer meet the exempt criteria, a new initial application will be required.

Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to the human subjects and change the category of review, notify the IRB office promptly. Any complaints from participants regarding the risk and benefits of the project must be reported to the IRB.

Follow-up: If your exempt project is not completed and closed after <u>three years</u>, the IRB office will contact you regarding the status of the project and to verify that no changes have occurred that may affect exempt status.

Please use the IRB number listed above on any forms submitted which relate to this project, or on any correspondence with the IRB office.

Good luck in your research. If we can be of further assistance, please contact us at 517-355-2180 or via email at IRB@msu.edu. Thank you for your cooperation.

Sincerely,

A. McGee

Harry McGee, MPH
SIRB Chair

c: Amanda McKay

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