SCHOLARSHIP EPISTEMOLOGY: AN EXPLORATORY STUDY OF TEACHER METACOGNITION WITHIN THE CONTEXT OF SUCCESSFUL LEARNING COMMUNITIES

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ABSTRACT

Metacognition has been used predominantly as a strategy to improve student thinking and learning and to help students gain an awareness and control over their own thinking (Manning & Payne, 1996; Perfect & Schwartz, 2002; Robson, 2006). Recently, however, metacognition has been recognized as necessary in *teacher learning* to help teachers gain awareness and control over their thinking (Manning & Payne, 1996). Teacher metacognition is a critical antecedent to student metacognition because, "teachers are not in a position to model higher psychological and metacognitive levels if they have not experienced these levels first as a prerequisite to encouraging them in students" (p. xxi). Schraw and Moshman (1995) stated that having a better understanding of the constructive nature of knowledge and how it happens allows individuals an opportunity to regulate their cognition and learning.

The purpose of this study was to explore teacher metacognition within the context of successful learning communities. A phenomenological research method was used. Data were collected from three participants in three separate learning communities using a pre-interview, two semi-structured interviews, several telephone conversations, and a variety of informal contacts. The fist semi-structured interview was designed to access the participants' experiences as members of their successful learning communities. The second semi-structured interview, termed the metacognitive interview, was designed to access the thinking behind their thinking.

It was found that the term metacognition required definitional reframing. This reframing resulted in the creation of an emerging model of Progressive Metacognition, indicating that metacognition was found to be progressive, and was catalyzed through reflection and dialogue. The interview process itself was also found to be an intervention in itself to catalyze

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metacognition. Each participant in this study was found to have a metacognitive characterization, which I referred to as their *metacognitive fingerprint*. This fingerprint represented both the participants' individual characterizations as well as their strategies in influencing the processes of their learning communities.

Successes in planning, observation, and reflection provided members with evidence that enabled them to feel capable and competent, thus fueled their drive to continue to invest in the learning communities. Scholarship epistemology was found to have an integral part in the development of metacognition through the successful learning community. By providing participants with important tasks and challenging work within an environment of trust, space, dialogue, reflection, and accountability, deep thinking and learning took place. This study provided needed detail related to Evers and Lakomski's (2000) theory of socially distributed cognition, indicating that when knowledge travels through the social system, rather than simply assisting in distributing the knowledge, each participant had an effect on the knowledge.

Among the implications of this study on theory are its contributions to social learning theory and the action research spiral, indicating the effects of collaboration and success on motivation. Among the implications for research are the need to investigate the direct effects of time, reflection, and discussion on metacognition, as well as the need to conduct a longitudinal study in this area to determine these elements' long term impacts. Among the implications for practice are a greater understanding of the elements at work in catalyzing metacognition, including the effects of success, as well as the environments and social dynamics required to encourage deep thinking and learning.

couldn't title this work "The Ninja Report" nor the "Universary disser-thingy", your encouragement throughout this entire endeavor allowed me to share my moments of insanity, and as a result, kept me sane!

Mom and Dad, thank you for laying the foundation in my life, and for supporting me in my goals, always, no matter what I chose to do. Your influence and encouragement are greatly needed and always appreciated. To Fred, Alice, and Jane, thank you for your help and backing with my family. Great thanks to Nicole, Rhéal and Luc: You continue to inspire me near or far! None of this would have been possible to complete without the support of all of you.

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CHAPTER 1

INTRODUCTION TO THE PROBLEM

"When you do not know a thing, to allow that you do not know it - this is knowledge."
(Confucius, 551 BC - 479 BC)

The concept of *metacognition* has been investigated in education circles over the past three decades (Fogarty, 1994). Since Flavell's (1979) introduction of the term, there have been years of research on metacognition, with the term appearing in an array of literature on teaching methods and strategies. Flavell implied that metacognition is the monitoring and regulation of thinking, and that it is intentional, conscious, purposeful, and directed. Since its introduction, the term metacognitio*n* has spread in its use and interpretation to be included in literature on problem solving, ways of thinking, ways of talking, and reflection, but every definition links the *meta* to cognition, indicating that metacognition is always controlled by cognitive mechanisms (Georghiades, 2004). Brown (1987) suggested metacognition as a "many-headed monster" (p. 105), and as such, an expansive term, that includes both knowledge and the regulation of cognition. Its use is often determined by the circles in which it is used (Manning & Payne, 1996). In the field of teaching and learning, the ultimate goal would be to have the educator well versed in metacognition to be able to pass this strategy on to students.

Metacognition has been used predominantly as a strategy to improve student thinking and learning and to help students gain an awareness and control over their own thinking (Manning & Payne, 1996; Perfect & Schwartz, 2002; Robson, 2006). Recently, however, metacognition has been recognized as necessary in teacher learning to help teachers gain awareness and control over their thinking. Teacher metacognition is a prerequisite to student metacognition because,

"teachers are not in a position to model higher psychological and metacognitive levels if they have not experienced these levels first as a prerequisite to encouraging them in students" (Manning & Payne, 1996, p. xxi). According to Schraw and Moshman (1995), having a better understanding of the constructive nature of knowledge and how it happens allows individuals an opportunity to regulate their cognition and learning.

There is a growing body of research exploring the use of metacognition to maximize instructional effectiveness (Hartman, 2001). Hartman described this maximization as teaching *with* metacognition, as opposed to teaching *for* metacognition to activate students' metacognition. Flavell (1979) added that metacognition can also be identified according to the plane in which it is used: Knowledge about the person (knowing yourself as a thinker); knowledge about the task (knowing the characteristics and demands of a task); and knowledge about the strategy (knowing how to perform a task). It is the combination of these three planes of metacognition that make up one's metacognitive knowledge.

Schon (1995) used the term *scholarship epistemology* to describe these metacognitive aspects as a new epistemology of teaching and learning. Distinct from *institutional epistemology*, where teaching is considered to be a transmission of knowledge from teacher to student, scholarship epistemology consists of the teacher examining the what, how, and why of what one says and does, and leading students through the same process. Manning and Payne (1996) stated that:

Not only do teachers need to be well versed in the knowledge, skills and

strategies we will call "metacognitive" but they must also connect with their own

personal and professional metacognitive awareness and regulation. It is our basic

contention that the high quality of teachers' metacognitive awareness and regulation is the foundation that determines the quality of instruction in classrooms. (p. xviii)

Teaching metacognitively requires that teachers think about their own thinking and learning by using their own metacognition to activate student metacognition.

Achieving Personal Mastery through Metacognition

The current wholistic, global-world paradigm there is increasingly focused on deep personal connection and reflection (Hatala & Hatala, 2004) to achieve greater personal knowledge. The ultimate goal is to know oneself so that one's beliefs align with one's practice. The success of aligning beliefs and practice depends on one's ability to reflect and to make changes toward this alignment (Mitchell & Sackney, 2000). This cognitive ability to reflect and align is referred to as *personal mastery* (Senge, 1990). Personal mastery is a search for truth, which consists of making the mental journey to see things as they are. Personal mastery sets the stage for accessing unexamined beliefs and increasing awareness. Senge suggested that achieving personal mastery requires the discipline of personal growth and learning, and that "people with high levels of personal mastery are continually expanding their ability to create the results in life they truly seek" (p. 141).

According to Duffy (2003), an individual's mental models, if left unexamined, inhibit learning. Senge (1990) said that personal mastery allows an individual to see reality more clearly. He stated that the juxtaposition of vision (what we want) and reality (where we are) results in a creative tension, where "the essence of personal mastery is learning how to generate and sustain creative tension in our lives" (p. 142). This creative tension acts as a balance

between the known and the unknown, emphasizing that knowledge and a desire for knowledge are required for learning to occur.

Stamps (1998) suggested that understanding how learning happens is central to the development and success of educators in fragile and context-dependent environments. In his work on learning ecologies, Stamps theorized that it is "the mix of interdependent elements and cultural factors that cause informal learning to happen, or not to happen" (p. 34). Similar to a correlation or regression analysis, where a researcher understands the factors that are related to one another, but not the catalysts of these factors, managers attempting to improve organizations often overlook the catalysts for learning, rather than taking the time to study the thoughts and relationships that effect the learning that does occur. In this dissertation, I hope to uncover some of this complexity to reveal part of the mystery of such complex and multi-faceted organizational learning.

Traveling Mentally and Psychologically Toward the New

Sturner (1987) created a model referred to as the *personal cognitive change process* that presents a cycle of steps through which an individual progresses during personal cognitive change. The process is transformational in that as individuals travel mentally and psychologically toward the new, they not only engage in taking a risk, but also in dealing with it. It is this cognitive dealing that moves an individual from an old way of thinking to a new way (p. 56). According to Palmer (1998), teachers have a fear of allowing this type of thinking to occur because some teachers see this thinking as reducing capacity, rather than enlarging capacity. Schon (1995) argued that if teaching is to be a form of scholarship, teachers must increase their capacity to learn. Increasing capacity can be done when individuals choose to deconstruct and

reconstruct their knowledge in an environment where trust is present and individuals work together. The problem is not that teachers do not know enough, the problem is that they are not doing what they already know (Schmoker, 2005). This phenomenon is called the "knowing-doing gap" (p. 149). Schmoker suggested that teachers have a tendency to implement what they already know. Without stopping to examine what they know, teachers are unlikely to make sustained changes.

Dickmann and Stanford-Blair (2002) stated that humans engage in social dialogue as a method to stimulate dissonance and reasoning. This participation stimulates brain network growth and mental rewiring, so much that "(t)his personal metacognition is considered a higher mental plane of functioning within oneself" (p. xxi).   This plane of functioning is what influences deep thinking in and among teachers. Sparks (2005) determined that teachers only engage in a small percentage of activities that actually effect teacher thinking and learning. However, this small percent is key to metacognitive stimulation and thinking. Examples of teaching methods that promote metacognitive stimulation are doing action research, designing assessments, engaging in case discussions, and collaborating. Sparks termed this cluster as the *final two percent*, and placed this percent at the far right of a continuum that depicts the stages of effectiveness of different levels of teacher learning. This final two percent "is that cluster of experiences that literally change the brains of the teachers and administrators" (p. 159). These experiences affect individuals by deepening understandings, addressing beliefs, and affecting the mind and behaviors to alter performance.

The Role of the Professional Learning Community in Teacher Metacognition

The professional learning community model may be one valuable mechanism or opportunity to invoke metacognitive thinking among teachers, because the model is based on action research, designing and evaluating assessments, case discussion, and collaboration. The professional learning community model has been used over the past decade as a key strategy for improving teaching and learning in schools (Dufour, Dufour, & Eaker, 2005). The learning community claim that the learning community has the capacity to engage the teacher as the central change agent in moving the school forward through three capacities that consist of: the organizational capacity, referring to the structures and processes within the organization; the interpersonal capacity, referring to the interactions among and between individuals; and the personal capacity, including the perceptions and understandings of the individual teacher in the learning community (Mitchell & Sackney, 2000).

The personal capacity of the learning community has to do with how an individual reflects on, and has a "confrontation with the values, assumptions, belief systems, and practices that individuals embrace" (Mitchell & Sackney, 2000, p. 13). This confrontation leads to the deconstruction and reconstruction of beliefs about education traditions, processes, practices, and expectations. The confrontation is a reassessment of what one knows about education. As Mitchell and Sackney said, "(t)his is a profoundly personal and potentially transforming phenomenon" (p. 13). As such, the deconstruction and reconstruction process leads to an examination of the metacognitive aspects of the personal capacity, and brings to attention such dichotomies as theory in practice and theory in use, explicit and tacit knowledge, and an external and internal search for knowledge and understanding.

One's understanding of the nature of learning that happens through a professional learning community may lead to an understanding of one's personal cognitive learning and changes that occur within the individual, what catalyzes this learning, how it takes place, and the environments (physical and social) that promote such learning. If one is aware of the constructive nature of knowledge, one is better able to regulate learning as knowledge is approached with less trepidation (Argyris & Schon, 1978). Argyris and Schon termed this phenomenon where the deconstruction and reconstruction of personal and organizational mental models occur as *double loop learning*. This contrasts with *single loop learning*, where one simply adapts to an external stimulus. Double loop learning involves a transformational change as a result of the new information. Double loop learning is, in essence, learning how to learn, and is inherently metacognitive.

Current research studies involving metacognition among adults have revealed that metacognition improves with practice in adults (Kratzig, 2006). Metacognitive studies have also been conducted among teachers (Anderson, 2002; Smith, 2005; Wen, 2004). Following the work of Blase and Blase (1998), Anderson (2002) conducted research on the effect of supervision on the optimal learning environments for teachers. Anderson discovered that affective supervision can create the conditions for improved teacher metacognition.

Following this research, Wen (2004) created an instrument to measure the teacher's use of metacognition as a form of reflection upon practice. Wen's study revealed the correlations between metacognition and experience, and found that teachers with more experience reacted more favorably to reflection and metacognition than preservice teachers did. Wen also

mentioned the importance of the teacher being aware of his or her own cognition in order for metacognition to take place.

Studies have contributed to a greater understanding of the conditions for metacognition and the usage of metacognition. In practice, a significant gap exists between the understanding of discovering the thought processes of teachers as they work through professional dialogues and professional development itself. In particular, there is a lack of understanding of the elements of of successful learning communities. Recommendations for future research following Wen's (2004) study included a recommendation that there be more research on teacher metacognition. Although interesting and informative, Wen's study was quantitative, and therefore provided limited information dealing with how and why thinking occurs. A qualitative study investigating individuals' experiences may provide rich information in this area.

Studies to provide an understanding of the nature of individual thinking that happens through a professional learning community may yield information regarding the personal cognitive learning and change that occurs within the individual, what catalyzes this learning, how it takes place, and the environments (physical and social) that promote such learning. Individuals who have been involved in successful learning communities may have experienced higher levels of cognition or metacognition through the practices of reflection, deconstruction, and reconstruction through learning communities. The investigation of the experiences of these individuals may provide a valuable contribution to the understanding the nature of individual cognitive learning and change, the catalysts to this learning, and how and where such learning takes place.

Purpose of this Study

The purpose of this study was to investigate teacher metacognition within the context of successful learning communities. I took a retrospective look at individual teacher experiences, and conducted the study in four main phases. In the first phase, successful learning communities were identified, and in the second, teachers within those successful learning communities who perceive that the learning community was successful were identified. In the third phase, stories of the participants' experiences in the successful learning communities were uncovered, and in the fourth phase, chosen teachers explored their thoughts more deeply in order for them to describe, explain, and understand their own thought processes at key stages throughout the experience. These key stages were identified from the participants' stories using horizonalization and phenomenological reduction (Moustakas, 1994) following the first semi-structured interview.

The goal of a constructivist study is to produce "reconstructed understandings of the social world" (Denzin & Lincoln, 2005, p. 184). Ontologically, this study sought to explore specific experiences from a relative perspective, co-created with the researcher playing a role in accessing metacognitive information. It was a qualitative study, and took a hermeneutical phenomenological approach to uncover the "oriented toward lived experience and interpreting the 'texts' of life" (van Manen, 1990). In keeping with the metacognitive nature of the study, pre-formatted research questions were not created. Using hermeneutical phenomenology (Moustakas, 1994), I was able to seek the *how* along with the *what* as the individual participants told their stories. Further investigating and questioning for the *how* as they re-examined their

statements and thoughts provided the opportunity for the collection of rich metacognitive data for further analysis.

Significance of the Study

I sought to understand the experiences and shared metacognitive experiences of individuals within the context of successful learning communities "in order to develop practices or policies, or to develop a deeper understanding about the features of the phenomenon" (Creswell, 2007, p. 60). This knowledge may be applicable to the planning of professional development initiatives with the understanding that, according to Manning and Payne (1996), increased teacher metacognition results in improved student metacognition which contributes to student success. According to Schmoker (2005), if teachers understand what they know, they are better able to implement what they know. They are also better able to engage students in their learning. This study may provide a window into discovering how teachers understand what they know, may spur further research into the thinking processes behind how teachers achieve that understanding, and how teachers choose to implement their knowledge and engage students learning. This study may also lead to discoveries about the participants' processes of cognitive change or growth with information that is revealed about how teachers work through the steps in the change process (Sturner, 1987) in order to arrive at a new level of knowledge or understanding.

Metacognition is thinking about thinking or the monitoring and regulation of thinking (Flavell, 1979). It is an inner awareness or process. Because it is an inner process, it is difficult to identify when metacognition is taking or has taken place because individuals are often not aware that it has taken place (Georghiades, 2004). This study may spur a process by which to

determine when metacognition has taken place and the process by which it may take place. According to Georghiades, "it is possible for metacognition to be detected if the learner is able to effectively…describe such understanding" (p. 374). Through this study, I attempted to have participants describe such understanding.

Researchers believe that "for higher level thinking to be generalized students should be given opportunities to think about their thinking" (Georghiades, 2004, p. 375). I intended to deliver insight and understanding in the field of *teacher* metacognition, which in turn, contributes to student success. Through this study, I aimed to discover teacher metacognition as *thinking-on-action*, (thinking retrospectively on events and behaviors). I also wanted to uncover knowledge about *teaching-in-action* (thinking on-the-spot which occurs as the teacher moves through work). In exploring metacognition, I hoped to provide insight into the participants' views of epistemology. As Schon (1995) indicated, institutional epistemology and scholarship epistemology exist in the world of teaching and learning. With a greater understanding of the participants' epistemological approaches to teaching and learning, there may be a greater understanding of the theories that determine the quality of teaching and learning in the classroom. This research may also contribute to the growing knowledge base on metacognition in teaching and learning (Hartman, 2001), potentially adding the knowledge of how and when metacognition is used. I also desired to provide the impetus for further research into the catalysts of teacher metacognition.

As stated by Hatala & Hatala (2004), a greater understanding of metacognition could open the door to further understandings of ways by which the gap between one's theory in practice and one's theory in use might be reduced, achieving the ultimate goal of enhancing self-

knowledge. Senge (1990) termed this learning as achieving personal mastery. This study may be used to provide knowledge of the types of professional activities that engage a teacher in metacognition and how the metacognition takes place, and may provide insight into or impetus for further research about whether or not these activities exist through the professional learning community; and, if they do exist, whether they are there because or despite the professional learning community. I also intended to provide rich information as to the lived metacognitive representations of teachers within learning communities through a "need to explore lived experiences rather than to obtain theoretical explanations" (Creswell, 2007) of the learning community phenomenon.

Although the study is not intended to be generalizable, this study aimed to provide initial discoveries into the complexity of knowledge and contribute to theories of how knowledge can be cultured and/or cultivated by individuals and organizations as they strive to succeed in the current complex knowledge society. As Stamps (1998) stated, with an increased understanding of how teacher learning happens, there may be an increase in knowledge about organizational learning as well.

Definitions

The purpose of this study was to examine teacher metacognition within the context of successful learning communities. The constructivist approach to the study meant that at the outset, the exact definition of teacher metacognition was unknown; so *a priori* definitions were not appropriate. Although previously existing definitions served as a departure point from which the research was based, based on the data I collected, I was compelled to examine the definition of metacognition later in the study.

Cognition: Cognition refers to two things: the process by which one comes to know, as well as the products of that process (Schwebel, 1986).

Deconstruction: Deconstruction refers to breaking down one's knowledge in the attempt to analyze its assumptions, bases, and validity. It is a questioning of beliefs. Following deconstruction, one has the ability to retain, modify, or reject previous knowledge (Mitchell & Sackney, 2000).

Horizonalization: The process of selecting the significant statements from data that are related to the phenomena being investigated. Statements not related are excluded (Moustakas, 1994).

Metacognition: Flavell (1979) described metacognition as thinking about thinking or the monitoring and regulation of thinking. Within the context of this study, metacognition will be explored in the way teachers were thinking as they moved through professional learning community processes and experiences.

Reconstruction: Reconstruction refers to the process of rebuilding one's knowledge after its assumptions, bases and validity have been questioned. Often reconstruction involves an altering of the original knowledge to account for new learnings (Mitchell & Sackney, 2000).

Reflection: Reflection refers to the process of thinking about, or concentrating on, an event or experience after it has occurred.

Scholarship Epistemology: Schon (1995) described scholarship epistemology as the process of teachers examining and reflecting on what they do and say, and why they do it, whereby they gain the skills to lead their students in doing the same.

Successful Professional Learning Community: A learning community is "a group of educators who work collaboratively with and learn from one another" (Dufour, Dufour et al., 2005, p. 9). A successful learning community is a learning community that ultimately brings about tangible or noticeable gains or improvements in student learning.

Delimitations, Limitations, Assumptions and Positionality

Scholarship Epistemology: An Exploratory Study of Teacher Metacognition within the Context of Professional Learning Communities was a constructive study using a phenomenological approach. As with any research approach, it is necessary to outline the delimitations, limitations, and assumptions of the research in order to be transparent as to the limits of the approach and the context in which the study is conducted. The position of the researcher must also be conveyed. The following section defines these delimitations, limitations, and assumptions and the positionality of the researcher.

Delimitations

Scholarship Epistemology: An Exploratory Study of Teacher Metacognition within the Context of Professional Learning Communities was qualitative, exploratory study of the metacognition of three teachers who were members of successful learning communities and who could identify their learning community as successful. Three female educators of varying age and levels of experience were selected from different learning communities identified as successful by a superintendent and a coordinator. The study took place in one school division; however, participants were chosen from different schools and different professional learning communities. I conducted the research over a three month period, but it included what the

participants reflected on and recalled of their experiences prior to the interviews, as well as through the interview process itself. The research included four phases (successful learning community identification, participant identification, a sharing of stories, and then sense-making of the experiences), and was conducted through a pre-interview, two semi-structured interviews, and a variety of other contacts with each participant.

Limitations

This study was subject to the following limitations:

1. Information was collected using semi-structured interviews and other personal communication, limitations of the naturalistic inquiry method applied, such as my inability to generalize conclusions because of the small sample size. Information was sought that reveals the individual participants' thinking.

2. The study was limited by the participants' willingness and ability to identify their own thinking or metacognition, and their ability to answer questions and to be open with their thoughts and perceptions.

3. This study involved a retrospective analysis, and was limited by the participants' ability to remember events and perceptions, to bring to mind the events, to recognize them as significant, and to recall which events or perceptions were relevant in their own thought processes and behavior.

Assumptions

I assumed that the learning community is a model through which individuals experience success and that metacognition occurs to some degree in the minds of individuals involved in successful learning communities. I also made the assumption that levels or degrees of metacognition can be expressed and understood.

Positionality

Throughout my teaching career, I have been fortunate to have had the rich opportunity to work with a variety of people in a number of different settings. From these experiences, I have learned two things. The first was that my learning has been influenced, accentuated, and augmented most dramatically by the people with whom I have been in contact. Secondly, I have learned that through the realization of how much I do not know and yet need to learn, I have become a better teacher.

I came about this realization from the last administrative position that I held prior to embarking on this research in which I enjoyed the opportunity to participate in a learning community that resulted in one of the most satisfying and rewarding experiences of my teaching career. I found it satisfying in that the students showed a quantifiable increase in their scores in the areas of focus, and I found it rewarding in that it taught me a great deal about teaching, working as a team, reflecting on success, and realizing growth and potential in my students and in myself.

At the outset, I approached the work in the learning community as I would have any other. I summed up the usual questions of *why are we here*, *what do we need to do, how should I proceed*, and the like. It was only after a few months of working with this group that I noticed a

cohesion starting to take place among the members. I noticed that through this group, trust among the members started to increase, and the behaviors of the group started to change. No longer did we act as a committee, conversing only at the table and at designated times; instead, we started to act as a group of learners. The conversations around the focus of the learning community started to occur randomly – in the halls, the staffroom, at the coffee shop, or wherever we gathered. My teaching style and behaviors started to change. I taught with my classroom door open; I invited others in; I observed colleagues' teaching; and I found the process exciting. I was excited!

I also noticed the greatest changes in myself when I started to think about the process that I was going through and my thought processes. I felt excited, so I started to investigate why. I felt energized, so I started to think about when and where I was energized. I saw my students' learning improve, so I started to think about how this improvement occurred. In actuality, I started to think about my thinking. During this thinking, I started to examine what I did that was energizing and valuable to the students and to myself or my colleagues, and what did not work or was not as effective. I also noticed that after thinking about my thinking for a period of time, I could actually determine why certain teaching practices or components made me feel uncomfortable, or why I was ineffective at them, and I took steps to correct them. Although I yet have much to learn, I was beginning to know how success can be achieved.

I wanted to know more! That led to my interest in this study. I am interested in the idea of metacognition – thinking about thinking. I wondered if others may have experienced the same, or if it was just coincidence that I happened to come across the practice. I knew there was considerable research on cognition, but what are its effects in reality? Does it have powerful

effects? If its effects are powerful, how do they happen? Where? Is it the processes within the successful learning community that got me thinking? Or was it just those people with whom I happened to be teaching? I needed to know more about teacher metacognition. I was looking forward to finding out more about learning communities and cognition.

Organization of the Dissertation

In Chapter 1, I have discussed a background to the nature of the study, its significance, a description of the language that was used, and the limitations of the study. Also included in this chapter is my positionality, which is key in describing a study such as this which employs hermeneutical phenomenology. Chapter 2 is a review of current literature surrounding metacognition, professional learning communities, and the personal cognitive change process. Chapter 3 describes the research design which uses hermeneutical phenomenology and the methodology used to conduct the research. Chapters 4 is a report of the data, collected through a series of interviews and other less formal conversations with each participant. Chapter 4 is organized into two parts. The first part is a representation of each participant's experience of working in his or her successful professional learning community. The second part is the thinking that occurred as each participant moved through the processes of working in the successful learning communities. Chapter 5 is an analysis of the data, in which I identified themes and connections among the stories and the metacognitive components of the study. Also included is a summary of what the experience of metacognition was, from the research, in the context of a professional learning community. Finally, chapter 6 includes the summary and conclusions of the study, and recommendations for further research.

CHAPTER 2

LITERATURE REVIEW

"(I)n lecture halls, seminar rooms, field settings, labs and even electronic

classrooms…teachers possess the power to create conditions that can help students learn a great

deal – or keep them from learning much at all" (Palmer, 1998, p. 6). Over the past decades, a

myriad of professional development initiatives, and theoretical models have been introduced in

an effort to capture the essence of teaching and learning. Recently, the onus of teaching and

learning has come to rest on the teacher. "Standards set the course, and assessments provide the

benchmarks, but it is teaching that must be improved to push us along the path to success"

(Stigler & Hiebert, 1999, p. 2).

This chapter focuses on the concept of scholarship epistemology and the importance of

the role of metacognition in teaching and learning. Through this review, I explore the concepts

of personal mastery, the knowing-doing gap and the professional learning community, as these

concepts are presented in current literature. I place emphasis on the importance of the

awakening of the mind and the self in increasing learning, as well as the need for exploring

cognition through individual and social learning. I focus the remainder of the chapter on

strategies in the literature that engage individuals in metacognition, as well as theories of social

learning that enhance the metacognitive process.

The New Epistemology of Teaching and Learning

Cognition and knowledge management have long been frontrunners in society's

knowledge management paradigm (Nonoka, Umemoto, & Senoo, 1996), which researchers are

calling the *knowledge society*. Organizational leaders continue to pay attention to how

organizations create, manage and capitalize on knowledge, and how knowledge is used to their advantage. In education, "continuing learning, both structured and self-directed, is critical to professional practice" (Graham & Phelps, 2003, p. 2).

The epistemology of teaching and learning in education has traditionally been known as the process of transmitting knowledge from the teacher to the student (Schon, 1995). Tyack and Cuban (1996) claimed that teaching has always been traditional and that this traditional approach is how society expects teachers to teach, and this is how students have always learned. For the most part, teachers have learned this way, so it is almost expected that they teach this way. Based on this epistemology, then, improving teaching would require an improvement in the ways in which information is transmitted from the teacher to the student.

The situation changes, however, if people in the education sector begin to entertain the idea that this traditional epistemology of teaching and learning may be incomplete or insufficient. Schon (1995) identified two ways of conceptualizing teaching and learning. He termed the first conception as *institutional epistemology* of teaching, the traditional idea that students learn through the transmission of knowledge from the teacher to the student. Students learn what they are told and do what they are shown, and knowledge is transmitted to students through curriculum and blocks of time. Schon argued that there is a second and new epistemology of teaching and learning, termed *scholarship epistemology*, which highlights the potential of greater learning through thinking. Scholarship epistemology, he described, includes reflection-in-action, reflection-on-knowing, and reflection-on-practice, whereby a teacher takes the opportunity to reflect deeply on what he or she does while he or she is doing it, what he or she knows, and what he or she has done after doing it. Contrasted with institutional

epistemology, where knowledge is simply becoming familiar with a model or theory and using it in practice, Schon referred to the process of metacognition in his description of appreciating the knowledge in scholarship epistemology – that is, becoming familiar with the use of the tool, the mind, in discovering knowledge. If a teacher wants to convey a certain knowing, he or she first has to understand what it is, and how it is that he or she knows something. "If we want to teach about our "doing", then we need to observe ourselves in the doing, reflect on what we observe, describe it, and reflect on our description" (p. 33). According to Schon, the majority of the time teachers do not do this, so ultimately, they fail in their teaching.

Scholarship epistemology consists of a teacher examining what it is that they do and say, why they do it, and leading students through the same processes. It is based on a constructivist approach to teaching and learning, but it includes a metacognitive aspect, so that through reflecting, a teacher can actually generate new knowing; real knowing that is relevant to oneself and to one's time and place. This reflection leads, then, to meaningful "reflective transfer" (Schon, 1995, p. 7), that allows students to use this newly created knowledge in other situations. When it is done well, it allows the teacher to do the same. Schon concluded that the contrast between institutional epistemology and scholarship epistemology illustrated a gap that exists between policy and practice. His work also serves, in this case, to highlight that in examining how individuals think and learn, one can learn about learning, but until there is engagement in such metacognition, studies about teaching and learning remain at a lower level.

Schon (1995) made a distinct comparison between the two epistemologies by applying a metaphor of the topography of a high, hard ground overlooking a swamp. On the high ground, there are technical, clear solutions to problems, but in the lower areas, the ground is dark and

muddy, and solutions are messy and intuitive. The two types of topography can be compared to the two epistemologies. Teaching on the mountain means using only technical, clear solutions. Teaching in the lowlands means facing uncertainty and using discovery to solve problems. Schon said that the world of education needs to look at scholarship epistemology as key to increasing knowledge and understanding. Teaching cannot solely mean the application of knowledge, but also the generation of knowledge.

Interestingly, Schon (1995) explored the nature of the knowledge in this new epistemology. Although this knowledge is often displayed in situations of uncertainty, conflict, or complexity, it is recognized as a higher level of knowledge. Particularly problematic, however, is the fact that "when we try to describe it, we find ourselves at a loss, or we produce descriptions that are obviously inappropriate. Our knowing…is in our feel for the stuff with which we are dealing" (p. 31). This tacit knowledge, or intelligence in action, however, is something that that one takes for granted. Much like knowing someone's face, but not ever describing it, knowledge is often taken for granted as known, but rarely described. "To become skillful in the use of a tool is to learn to appreciate, as if it were directly, the qualities of materials that we apprehend through the tacit sensations of the tool in our hand" (p. 32).

The Knowing-Doing Gap: Turning Knowledge into Action

Schmoker (2005) identified a conflict similar to Schon's (1995) description of a gap between theory and practice. Schmoker (2005) termed this conflict the *knowing-doing gap*. He spoke of a dichotomy between training and doing. "(T)he problem is not that we do not know enough – it is that we do not *do what we already know*" (Schmoker, 2005, p. 148). Through his research, he found that some teachers know that they should use rubrics, higher-order reading

strategies, meaningful writing exercises, and meaningful assessment, but that they do not use these tools to the extent that they know they should. He claimed that the problem with this knowing-doing gap is not that they do not know enough, nor that they are not driven to do it; but it is in the way that they organize themselves to work – in isolation rather than in collaboration. Learning from each other is a critical missing element, which prevents educators from capitalizing on each others' expertise. Without stopping and reflecting, deconstructing, and reconstructing what the knowing-doing gap is really pointing out, one has little chance to make sustained improvements. As Senge (1990) described it, there is a need for willpower, reflection and understanding, while driving toward a goal, allows for such a transformation.

Schmoker (2005) explained the benefits of turning planning into action, and action into knowledge to effect profound change. The planning-to-action-to-learning path works, and builds the momentum needed to sustain improvement. Schmoker "is convinced that the short-term wins teachers will experience as a result of this process can provide momentum to sustain the school improvement process" (Dufour, Dufour et al., 2005, p. 231). If teachers are called to action, these actions lead to deeper understanding, commitment, and effectiveness.

The Role of Metacognition and Increasing Learning

Metacognition involves thinking about one's own thinking. It is a process of trying to understand one's self and how one's perceptions affect one's work. It is a study of perceptions, actions, and behavior. Through metacognition, one actually increases learning, with a better understanding of the processes by which he learns. Described by Argyris and Schon (1978), if one is aware of the constructive nature of knowledge, one is better able to regulate learning as knowledge can be approached with less trepidation. Metacognition requires a capacity to think

beyond the new material to the way that this new material is being understood, and why and how it is being understood.

According to Schon (1995), metacognition can occur as reflection-in-action and reflection-on-action. Reflection-in-action occurs as a part of action research, where reflection happens during or through a performance, where one can actually use the reflection to change the outcome before an event is over, in a stretch of time when the actor can still affect the outcome of the event. An example of reflection-in-action is when a doctor is treating a patient. Through the work, the doctor might realize that treatment is not doing what she anticipated, thus she changes the course of action to effect a different outcome. Schon used a brief sports analogy when describing that reflection-on-action is reflection after an event has occurred, such as a basketball player attempting to make a basket, and failing, and then playing out his moves in his head or on video following the play. He might be thinking about how he moved, what he did, and what he would have to do next time in order to change future results.

Both reflection-in-action and reflection-on-action are critical aspects of learning, and necessary in the education sector. Schon (1995) stated that all individuals have this capacity, but that it is refined if one does it more frequently. The more it is done, the more practitioners can benefit from action research, from creating new knowledge, and from learning the ways in which this new knowledge can be applied at levels that reflect deep personal change.

Transaction and Transformation – Awakening the Mind

In their work on Integrative Leadership, Hatala and Hatala (2004) emphasized that in order for change to be transactional and transformational, it must occur through an awakening of oneself. This awakening involves acting knowingly, which includes the learner, the mind, the

perception, and the learner's conscious awareness. It reflects what Mitchell and Sackney (2000) emphasized by explaining how deconstruction and reconstruction lead to personal changes and reflection. In Hatala and Hatala's (2004) description of change through transaction and transformation, in awakening one's personal self, deconstruction and reconstruction may take place.

Like Wilson and Ryder (2004), Hatala and Hatala (2004) argued that the pursuit of personal capacity is dominating the forthcoming paradigm of the global socio-economic world, arguing that it is the changes in people, cultures, and organizations that command attention in the investigation of ways to improve. Hatala and Hatala looked at three historical paradigms to illustrate their argument. Of the three paradigms that they referred to, the *mechanistic* paradigm focused on competition, knowledge, and rules or debate. The *organic* paradigm evolved into an appreciation of cooperation, understanding, and discussion. The current paradigm is the *wholistic* paradigm, which includes collaboration, wisdom, and dialogue. Although the wholistic is often referred to as *holistic* in other texts, Hatala and Hatala uses the alternate spelling, thus I use it in this section also.

The implications of the wholistic paradigm are that there is an increase in focus on deep personal connection and reflection. Hatala and Hatala (2004) predicted that over the next decade, "the mechanistic paradigm will decrease from 85% to 50% of the population. The organic paradigm will increase from 10% to 30%, and the wholistic from 5% to 20%" (p. 56). Paralleling Mitchell and Sackney's (2000) ecological worldview, Hatala and Hatala (2004) suggested that those operating from the wholistic paradigm will be capable of greater flexibility,

adaptation, creativity and inspiration in the face of change. Table 1 includes a description of

Hatala and Hatala's three paradigms in our global socio-economic world.

Table 1.

A summary of the type of thinking dominating each paradigm

Type of Thinking	Paradigm		
	Mechanistic	Organic	Wholistic
Relationship	Competition	Cooperation	Collaboration
Thinking	Serial	Associative	Unitive
Personal	Image	Character	Essence
Change	Transact	Transform	Transcend
Process	Knowledge	Understanding	Wisdom
Governance	Rules	Practices	Principles
Communication	Debate	Discussion	Dialogue

Palmer (1998) holds an ecological, wholistic view of teaching and learning as well. He

stressed that mastering teaching and learning always seems to elude one's grasp. The reasons for

this elusion are that the subjects taught in schools are large and complex, that the students are

even more complex, and the most fundamental reason, that "we teach who we are" (p. 2).

Palmer advocated that it is impossible to master the vast knowledge in all of the subjects that we

are asked to teach, and the complexity of the students that we teach is not expected to diminish.

To do justice to teaching, therefore, is to know oneself. Knowing oneself is as crucial as

knowing one's subject or knowing one's students. "The more familiar we are with our inner

terrain, the more surefooted our teaching – and living – becomes" (p. 5). As Hatala and Hatala

(2004) outlined, knowing ourselves illustrates the properties of unitive thinking, where one combines all of the aspects of the person, rather than limiting thought to the linear dimension. Palmer (1998) stated that through representing oneself in unity one can know oneself, and knowledge of self comes alive through teaching and learning.

In Search for Personal Knowledge

When seen through the lens of a constructivist epistemology, the personal capacity dimension of a learning community entails a personal, deep, and confrontational deconstruction and reconstruction of beliefs, values, and attitudes toward teaching and learning. The personal capacity dimension has very little to do with teaching as we know it, as it focuses greatly on the personal learning of the individual as a member of a learning community. Mitchell and Sackney (2000) termed a deconstruction and reconstruction of beliefs creates a *professional renewal* affecting the tacit underlying assumptions in a search for one's own theory of practice. It is both "an internal and an external search. Members seek inside their hearts and minds for the tacit practical knowledge upon which they rely for their professional identity, and they search their networks for the explicit knowledge bases upon which they rely for their professional expertise" (p. 17).

This entire process is a search for personal knowledge. Much of this search involves striving to align one's espoused theory with one's theory-in-practice. In their work, Mitchell and Sackney found that a misalignment between one's espoused theory with one's theory-in-practice leads to inconsistency among beliefs and behaviors, which, at times, has devastating effects. Addressing these discrepancies, then, entails a deconstruction and reconstruction, much like

Hatala and Hatala's (2004) theory of transformation, requiring a search for knowledge, and an understanding and articulation of both espoused theory and theory-in-use.

Articulating Theory versus Practice

The internal search process in determining the alignment between one's espoused theory and one's theory-in-use involves two stages (Mitchell & Sackney, 2000). The first stage is an articulation of one's espoused theory; that is, describing one's professional theory – competencies, attitudes, and values. In terms of teaching, this articulation includes "teaching and learning expectations; goals and purposes of education; instructional strategies and pacing; content scope and sequence; curriculum bases; evaluation purposes and practices; school and classroom organization; and classroom management practices" (Mitchell & Sackney, 2000, p. 19). Articulating an espoused theory is relatively easy since it exists in one's thoughts, having been read or studied.

The more difficult facet of this search is the second phase, that is, articulating one's theory-in-use. Articulating a theory-in-use consists of both an explicit and an implicit component. The explicit component is that which exists in practice, and it is known. The implicit component is more difficult as it is tacit. It involves acting and then measuring the effects of those actions on the self, students, parents, colleagues and community.

> It begins with a simple description of existing practices, moves through an analysis and evaluation of the practices, and leads to a deconstruction of the professional assumptions, beliefs, values, and practices that are embedded in the professional narrative…This sort of analysis, if done in a spirit of honesty and professional curiosity, is likely to reveal discrepancies between what was

intended and what actually transpired. This provides a powerful metacognitive tool for blending these new insights with prior understandings in such a way as to reconstruct the professional narrative. (Mitchell & Sackney, 2000, p. 21)

Critical reflection, such as articulating one's espoused theory and one's theory-in-use, can be both promising and perilous: Promising in that critical reflection opens a door for honesty, evaluation, and change; and perilous in that critical reflection may lead one to a frightening threat to one's personal identity. For some people, realization through reflection means that a need for change exists, and the perception of that potential change may be that it is a looming, ominous threat to one's sense of stability. The success of critical reflection depends on one's outlook toward reflection and change, and one's ability to embark on the change process.

Embracing the Cognitive Unknown

Sturner (1987) described deconstruction and reconstruction as dis-association and re-identification. Sturner noted a vast difference between change and taking a risk, and he made an important linguistic differentiation between the two terms. Change is something that occurs all of the time, in and out of ourselves. Risk is something chosen or willed. It creates change and it involves giving something up for something else. It is one's ability to risk affects one's ability to change, thus risk is a large part of this dialogue.

In dis-association and re-identification, one consciously chooses to risk something (usually a role) for something else (usually an expansion to the role). These risks often change one's identity. Success with dis-association means that one has chosen to "expand your affirmations of self, or at least your sense of potential" (Sturner, 1987, p. 7) which may lead to

achieving risk-goals. When one risks change, one decidedly embraces the relatively unknown and gives up control. This loss of control can take on various appearances. Sturner used the spiral as an analogy to describe an individual who risks change, and he identified stages of the spiral as (a) the acceptance of the challenge, (b) the destruction of old assumptions, (c) the letting the new assumptions in, (d) the combining the old and new into a new creation, and (e) the celebration of the new creation.

When one embarks on change one of the following can happen: The spiral can either spin outward and then head back (exemplified by one's fears); it can spin outward and pick up confidence; or it can perhaps even go onto another orbit and move on to more unknowns. What affects the spiral to continue is learning from the past, the excitement of new learning, and one's controlled response so as to not lose hold altogether. The frightful opposite of never spiraling out, however, is the status quo which results in failing to move to new realizations or understandings.

Palmer (1998) admitted that although professional learning often involves fear, this fear can be a positive element, if teachers use it to challenge their own thinking. "The fear that makes people porous to real learning is a healthy fear that enhances education, and we must find ways to encourage it" (p. 39). This fear is one that causes teachers to question themselves and to improve themselves. Teachers have little experience in working through such a challenge. They don't often look deep into their fears in order to uncover the resistance, or the path to overcome it. It is doubtful that experience in teaching alone will provide teachers with the ability to do this. However, working in community, and engaging in honest discussions can force teachers to look at what they know and what they don't. Working in a community provides an opportunity

for teachers to become experienced in deconstruction and reconstruction, or as Palmer called it, to become experienced at being porous to real learning.

Employing the Knowledge Arts

Sparks (2005) coined the term *knowledge arts* to depict the growth and development associated with learning communities. Through the knowledge arts, teachers "create knowledge about teaching and learning, communicate it to one another, organize it within themselves and for others to make it more meaningful and accessible, and act on that knowledge for the purpose of improving student learning" (p. 156). This type of learning is an active form of learning that involves deconstruction and reconstruction, dialogue that continues over a period of time, and may include action research, metacognition, and other activities that cause members to reconsider what they know and how it applies to teaching. "Put another way, profound professional learning produces teachers and administrators who say what they have not said, believe what they have not believed, understand what they have not understood, and do what they have not done" (p. 158). Because of such learning communities, members alter how they think, what they say, and what they do.

From Sparks' (2005) work, one can visualize a professional learning continuum, depicting the stages of the level or effectiveness of the learning. As shown in Figure 1, on the left of the continuum are the policies and legislation that intend to affect professional learning and collaboration; in the middle are the structural changes, reallocation of resources, and planning that preclude professional learning. Moving to the right are professional learning activities, such as collaborative activity and improved practice, as a result of the very left and middle levels of the continuum. Activities that mirror the various stages of professional learning

The community of educators
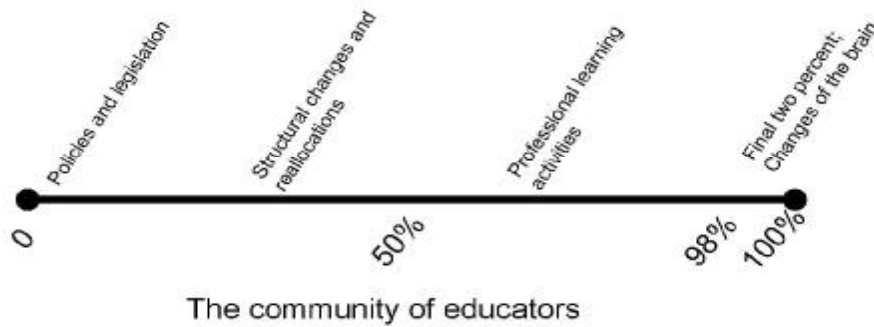
Figure 1. The Top Two Percent

communities, such as establishing goals, visions, values, etc. are on the continuum progressing to

the right. Interestingly, however, is Sparks' (2005) articulation of the activities at the very right

end of the continuum, which he labeled the "final two percent" (p. 158). In this final two percent

"is that cluster of experiences that literally change the brains of the teachers and administrators"

(p. 159). Sparks stated that these activities can take many forms that can literally take a school

from the lowest levels of performance to the top levels, but may also consist of just a tweaking of

activities already familiar to teachers, to those that are less familiar. He said:

> Educators have these experiences when they read, write, observe, use various
>
> thinking strategies, listen, speak, and practice new behaviors in ways that deepen
>
> understanding, affect beliefs, produce new habits of mind and behavior, and are
>
> combined in ways that alter practice. Such professional learning produces
>
> complex, intelligent behavior in all teachers and leaders and continuously enhances
>
> professional judgment. (p. 159)

The final two percent involves one's brain as well as one's behavior. These activities

include action research, designing and evaluating assessments, case discussions, critical collegial

analyses, data analysis, lesson study, and the like. Sparks (2005) claimed that these activities have a profound impact because they are active and affect not only student learning, but also teacher learning. They have a "significant effect on human performance and relationships" (p. 162). Figure 1 depicts this model adapted from Sparks' (2005) depiction of the spread of professional development activities and their effectiveness.

Sturner's (1987) work is two decades old, but his advice is comparable to Dufour and Eaker's (1998) step by step methods for the incorporation of a learning community, to Palmer's (1998) ideas on the reaching the heart of education, and to Sparks' (2005) work on the knowledge arts. Each work stresses that significant improvements to teaching and learning rest on the cognitive ability of the teacher rather than on their knowledge of content. Improvements rely on the teacher's ability to reflect on, deconstruct, reconstruct, understand and take cognitive control of the change and of their own responses to it. These cognitive and metacognitive elements are key components of the improvement process.

Traditionally, the teaching and learning environment provided little opportunity for deconstruction and reconstruction. The professional learning community model is a vantage point from which to explore new opportunities and learn from the experience of working together.

The Professional Learning Community Model

The professional learning community, commonly known as the *PLC*, has been around for decades, but it has been more recently brought to the forefront by Dufour and Eaker (1998), Mitchell and Sackney (2000), and Wenger (1999) and his theory of *communities of practice*. Through studying such organizations, Mitchell and Sackney found that the term learning

community lacked clarity and did not reflect what they saw in the field. They identified the learning community as "a group of people who take an active, reflective, collaborative, learning-oriented, and growth-promoting approach toward the mysteries, problems, and perplexities of teaching and learning" (p. 9).

Central to the success of professional learning communities are the practices of collaboration and accountability, similar to the theory of communities of practice, described by Etienne Wenger (1999). Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly (Wenger, 2004). Schmoker (2005) identified professional learning communities as self-managing teams, quality circles, team-based organizations, or, as found predominantly in education, communities of practice, continuous improvement teams, or collaborative communities. A learning community, in this study, is defined as a "group of educators who work collaboratively with and learn from one another" (Dufour, Dufour et al., 2005, p. 9). Working collaboratively in a learning community includes setting goals, measuring their attainment, and monitoring for further or sustained improvement (Dufour & Eaker, 1998). A learning community is described as a group of teachers who do not work in isolation, but who share their practices, set goals, experiment with new strategies, measure outcomes, and adjust their strategies within the personal, interpersonal and organizational capacities to achieve their goals.

The Properties of the PLC

As groups of educators working collaboratively and learning from one another, a learning community has the power to create lasting impact and change in a school. This impact is not simply achieved through the adoption of the structure of the learning community, but rather

through a transformation in the knowledge, growth, and practice of and among the members involved.

Dufour, Dufour & Eaker (2005) claimed that there are three significant challenges that face educators employing the professional learning community model as a strategy. The first challenge is to develop a shared and applied knowledge. Mitchell and Sackney (2000) stated that shared knowledge is the glue that holds the community together, either in the form of "a shared vision, common understandings, or a common goal" (p. 8). This shared vision and common understanding requires emphasis, because the term "learning community" appear to be widely used (Dufour, Dufour & Eaker, 2005), but as Fullan (2005) asserted, the actual underlying conceptualization and thinking necessary for an authentic learning community are not as widely understood or effected. In a true learning community, members act from a common ideal and strive to accomplish it collaboratively while learning from one another. A professional learning community is not a series of meetings. Rather it is a group of people who work together on an organized plan. People may meet, but they also accomplish a great deal outside of the meeting setting. Working together is a necessary component for effectively employing the professional learning community model.

The second challenge is to sustain the hard work of change. This challenge implies that using the professional learning community model requires working through the stages of the model, but its use initially involves considerable effort to break from traditional practice. In order to sustain the hard work, a member of a learning community does more than sit and take notes at a meeting. There is a dynamic aspect to the learning community in that its members are open to change through interaction and learning. Because all members are engaged in the

learning, traditional practices (that are no longer effective) have the potential to be dropped to make room for new ones (Wilson & Ryder, 2007).

The last challenge for the professional learning community is to transform the school culture. As Dufour, Dufour and Eaker (2005) asserted, this stage is the most difficult in that the professional learning community concept is "not just a series of practices – it rests upon a set of beliefs, assumptions, and expectations regarding school" (p. 11). Similar to what was learned from Stigler and Hiebert (1999), this assumption rests on the idea that a transformative, deep-set change might occur. A structure designed to change practice will not be sufficient in order for effective reform to happen; rather, it is a transformation that is required – one that changes beliefs and norms, and the traditional culture of education in all three capacities (the personal, the interpersonal and the organizational) of the learning community.

Conditions for the Professional Learning Community

Mitchell and Sackney (2000) described the organizational mindset of schools as traditional, fragmented and linear, in stark contrast to the emerging holistic worldview of organizations that are capable of change amidst the demands of our diverse and changing world. The learning community concept parallels that of a connected world or system and is a contemporary example of a constructivist, holistic structure existing against a backdrop of traditional, linear, compartmentalized schools.

Stacey (1992) found inconsistencies between linear models and the changing, complex nature of our world. Stacey declared that traditional approaches in complex organizations are antithetical, and one must create new responses as solutions rather than simply adapt to change.

Creating new and authentic responses provides a sound departure point to succeed in a complex world.

Stacey (1992) also pointed out another dichotomy. He said that traditionally, one thinks of stability as excellence and instability as failure. In his work, he found that successful organizations survive in unstable conditions because of their ability to accept new information, analyze it through present information (often with conflicting ideas or members in conflict), and respond to the change. These organizations have feedback systems that allow them to survive in unstable environments. It is the nature of the leadership that makes or breaks the success of the organization. If the leadership believes that instability is a sign of failure, it will mean failure for the organization, but "if they believe that instability is an inherent and necessary feature of a successful business, they will seek to provoke certain kinds of instability" (Stacey, 1992, p. 47). Stacey saw conflict as a necessity in order for an organization to create the opportunity for change. Conflict induces dialogue and discovery in the search for solutions. Through conflict, new and authentic responses are created in unstable environments.

The learning community model provides opportunity for the creation of new and authentic responses. The learning community does not look at the isolation, borders and boundaries of schools. The learning community is more natural, reflecting a holistic, ecological worldview (Mitchell & Sackney, 2000, p. 3). The focus of learning community is on the capacity of humans to learn and grow, together with and among one another. The learning of educators is as central in the school as the learning of students. In this approach, educators are "supported and encouraged to learn within a spirit of trust and respect, for without trust, learning languishes" (p. 9). Without trust, one reverts back to what Palmer (1998) described as the

fearful, isolated system of teaching, one in which sharing is minimal, and risk taking is infrequent. The learning community is a natural structure through which conflict and growth can occur, increasing its effectiveness as a catalyst for growth.

Organizational, Interpersonal and Personal Capacity

Mitchell and Sackney (2000) proposed a model compatible with an ecological worldview, outlining three capacities that interact and make up a learning community (p. 13). These three capacities are the organizational, interpersonal and personal capacities. This model is recursive, suggesting that each capacity affects the others, builds upon the others and re-affects the others. "Boundaries between capacities are permeable and borders are expandable" (p. 12). The shape of the model is flexible because some capacities may lead while others follow. The model may also be smooth or rough, with dips and ebbs. The three capacities, however, indicate three specific dimensions of learning which are key to a learning community. Figure 2 depicts the three categories, organizational, interpersonal, and personal - as they exist distinctively and recursively.
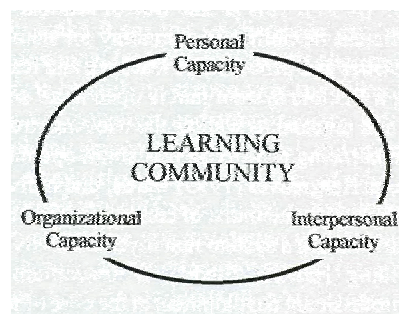
Figure 2. Capacities for building a learning community (Mitchell & Sackney, 2000, p,13)

Organizational Capacity

The organizational capacity of a learning community is the structures and processes of the organization that often either facilitate or impede learning community capacity.   Today's linear, fixed school structures are challenged with the learning community model because they may not resemble the structure necessary to foster an ecological system. "Organizational capacity entails creating a flexible system that is open to all sorts of new ideas, that welcomes the eccentric and unusual as well as the tried and true" (Mitchell and Sackney, 2000, p. 14). The organizational capacity can make or break the personal and interpersonal capacities within the organization, because the most common barrier that impedes learning community development is the rigid, isolated structure of schools. Other barriers that impede organizational capacity include marginalization by some staff members, domination by others, teacher turnover, trivial issues becoming major elements, and over-extended workloads (p. 78). Supporting connections, diversity, and inclusion, the opposites of the barriers, would then naturally support organizational capacity.

Not all people are open in these environments, nor would one expect them to be. The notion of Janis' (1972) groupthink, a condition emerging when a group, striving for unanimity overlooks other plausible alternatives, would suggest that there are dangers if everyone is in agreement. A fluid environment hosting a variety of views prevents stagnation and ignorance toward emerging issues, thus its presence in organizations displaces the bureaucratic, isolated tradition.

Interpersonal Capacity

Interpersonal capacity is an organization's capacity in terms of collegial relationships, collaboration, and collective meaning. Key to this stage is "sustaining and sustainable affective conditions, cognitive processes, and group interactions" (Mitchell & Sackney, 2000, p.14). Critical to this stage are the relationships between and among members. Interpersonal capacity building must be open and honest so that affective relationships can develop, and trust can exist as a solid foundation for the group. Mitchell and Sackney (2000) implied their ontological view of group learning, stating that "this is not to suggest that groups learn. They do not. People learn. Groups, however, shape the environment within which the people learn" (p. 46). Key to this environment for learning is the trust that exists between and among members. In order for people to engage in learning together, there must be an affective climate with trust as a major foundation. In order for people to learn, educators need to encourage one another to be open, take risks, and contribute in a world where they have traditionally always been expected to have the answers. They also need to feel that they exist in an environment where they can seek support from, and also provide support for one another. "Professional affirmation doesn't happen by accident" (p. 47). Professional affirmation needs to become the accepted norm.

Creating the necessary foundation of trust is not easy, but it is possible. It is also necessary in the success of a learning community. Once trust is established, it is possible to develop a collaborative culture where "it is more important to give and receive help than it is to know everything oneself" (Wenger, 1999, p. 152). The impact of such a collaborative culture accumulates, so that if it were possible to calculate, the collective knowledge of the group would be exponentially larger than simply adding up the knowledge of all the parts.

Personal Capacity

Personal capacity involves the "confrontation of values, assumptions, belief systems, and practices that individuals embrace" (Mitchell & Sackney, 2000, p. 13). Personal capacity emerges by coming to terms with these beliefs that educators understand what they know and what they need to learn. It is, as Schon (1995) described it, reflection-in-action, where one thinks about what it is that one is doing and why, so that one can even imagine new ways of doing things and then implementing them. A professional reflects on actions or practices "thereby making (them) explicit and subjecting (them) to critique and testing the strategies, assumptions, or problem-settings implicit in a whole repertoire of situational responses" (p. 6). This reflection creates new awareness and new knowledge, not possible to achieve without the initial confrontation of values or beliefs.

In a learning community, individuals deconstruct and reconstruct their understanding with each other, collegially, increasing their personal capacity to learn. Schon (1995) argued that if teaching is to be considered a form of scholarship, "then the practice of teaching must be seen as giving rise to new forms of knowledge" (p. 8). Giving rise to new knowledge does not happen in isolation where teaching involves simply the transfer of knowledge (Sickle & Kubinec, 2003), rather new knowledge has the potential to happen when individuals choose to deconstruct and reconstruct in environments where trust is a foundation, and members are expected to work together.

Although all three capacities, organizational, interpersonal and personal, require attention and improvement, for the purpose of this work, increased attention will be paid to the personal capacity dimension of the professional learning community. Reflection, analysis, deconstruction

and reconstruction will be further discussed as it pertains to learning community and improvement.

Toward Understanding the Personal Cognitive Change Process

In the context of teaching and learning, prior to building one's own personal capacity, teachers must first analyze what it is that they know and how they know. This requires analyzing where they are situated in terms of objectivism (observable knowledge) and subjectivism (knowledge comes from within), similar to a personal philosophy. Without an understanding of their own personal beliefs in this area, it is doubtful that they can make connections with others and understand themselves (Palmer, 1998). From this point, they can begin to understand where their individual ideas of resistance or hesitation enter their minds. If they are primarily objective, then they may fear the subjective (those feelings of relationship and personal dependency that elude him). If they is primarily subjective, then they may fear the objective – the anarchist and positivist systems that govern society. Through thinking about this process, they are able to better grasp what it is that they know, what they do not know, and where they need to go, or who they need to connect with to alleviate their fear or these unknowns. The largest benefit in all of this is that once they encounter what they know, what they do not know and what they are afraid of, they will break through to a new way of being and a new way of teaching.

Sturner (1987) identified a cycle of steps that one undergoes through the personal cognitive change process. This cycle is helpful in that it illuminates what one must encounter before, during, and after what Mitchell and Sackney (2000) call the deconstruction and reconstruction phase. The cycle also explains clearly that personal change is not easy, but through it, one can avoid reverting to the status quo. To summarize, Sturner (1987) created a

model which illustrated the stages that one undergoes through the personal cognitive change process. This model is shown in Figure 3. Sturner indicated that in the initial changes, *beckoning* occurs when an individual realizes that he is discontent with what is occurring around him. Then, *questioning* occurs when the beckoning does not go away. Once

Accepting ⇨ Transiting

Separating

Transforming

Questioning

Connecting

Beckoning

Celebrating

A New Cycle Integrating
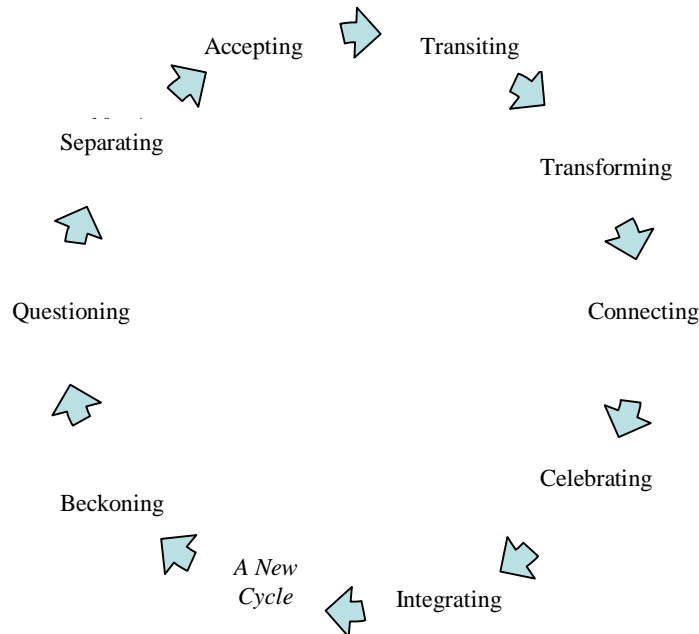
Figure 3. Steps in the personal cognitive change process.

one questions what the beckoning pertains to, the beckoning takes on a focus. The third stage involves a sense of mental commitment termed *separating*. That is, a release of an attachment to something in order to pursue something else. This stage can often be painful, lonely, or confusing, as one is searching for the anchor to the beckoning. The *accepting* stage is the connector to the separating stage. The individual has accepted somewhat of a new position - a new plateau. At this point, there is little chance of turning back.

The next phase involves *transiting* as an individual can see something emerge as a future to the beckoning. At this point, one sees the world differently again, and is able to reaffirm convictions and self-belief. "The future is still unclear but at least it is no longer enshrouded in fog" (Sturner, 1987, p. 60). At the *transforming* stage, an individual travels mentally and psychologically toward what one has risked. "Since the new bridge is built, the river can be crossed and the transformation begins" (p. 61). The new skills and new identity can now be acted upon as this stage moves the individual from the inward to the outward.

The *connecting* stage is the stage at which an individual now feels comfortable. The new has become the norm. A new balance emerges mentally and behaviorally, and one is at home with it. At the *celebrating* stage, the connections grow stronger, and life is enjoyable, affirmed and appreciated. The success has been achieved, and the cascade of emotions comes with it! The last stage is the *integrating* stage, where the new is no longer new, it is just part of an individual. At this stage, one can see that one has overcome the fear, risk and change, and the new experience encourages the participant to take on a new one!

Although there is some overlap with the developmental and behavioral components of personal capacity. The theories which help to explain the cognitive component of personal capacity have common themes. In order to develop one's personal capacity, the structures and settings for development must be open and safe, the activities must be a mix of collaborative and social activities, and the change must be one that connects with one's personal, core identity, and illustrate gaps between what is said and what is practiced, and the reasons behind what is being done.

Socially Distributed Cognition

One of the overlaps in the capacities of the learning community is how cognition can be considered individual and social. The search for identity and meaning often involves both an internal and external search process. The external search is much like a study in network theory, where one examines how and where one attains new information, among and between whom do they compare and contrast ideas, and with whom do they discuss and explore alternatives. Evers and Lakomski (2000) termed this phenomenon *socially distributed cognition*, in which educators communicate, share, deconstruct, and reconstruct in networks with colleagues. The ties developed with colleagues can be considered strong or weak. Strong ties are close relationships with colleagues who have similar goals, and with whom they work closely. Weak ties are relationships with colleagues who are less connected; although, these relationships are ones from which new information is often learned. Weak ties are often jagged, controversial, and result in conflict. This conflict can create conditions in which educators must examine and re-examine their narratives, resulting in new professional knowledge. The danger in having too many close ties is that work is rarely challenged, and stagnation can set in. The danger in having too many weak ties is that work may remain isolated and conflict might be high.

Advancements and discoveries in any field are never the product of one sole genius, rather they are "culminated interpretation and refinement of information gleaned from other minds" (Dickmann and Stanford-Blair, 2002, p. 53). The human brain seeks ways to expand its opportunities to interact with other brains from the development of basic language to the invention of the world-wide-web, changing the definition of communication.

The brain also interacts for survival. Dickmann and Stanford-Blair (2002) asserted that social interaction is the vehicle that we use to advance our intelligence. Through social interaction, we have the opportunity to engage others in dialogue and debate. This interaction also creates energy, and stimulates dissonance and reasoning. They added that it also "physically affects electrochemical activity in participating brains and, in response to a quantity and quality of stimulation, stimulates neural network growth and rewiring. It is how you refine your emotional being, resolve your beliefs and think your best thoughts" (p. 59). The nature of the brain as a system is no different from other systems in nature, and it is disposed to "interact with like brain systems to organize and interact in a vast array of social systems-from families and teams to governments and religions" (Dickmann & Stanford-Blair, 2002, p. 50). Arguing that intelligence is a social phenomenon is an easy one to make based primarily on evolutionary fact.

According to Wenger (1999), most often, learning occurs when we are in problematic situations, in challenging scenarios, or sometimes in revelations from individual events. As individuals engage with others in practice, they engage in conversations, bringing in knowledge, experiences, and culture. As this engagement is done, others do the same. Although individuals know how to converse, every time they do it, they recreate it, changing what they know even ever so slightly. Wenger (1999) explained that individuals are in a constant process of "negotiation of meaning" (p. 53). This negotiation may be through conversation, but it also exists through interpretations of others' actions. Through this type of recursive thought, behavior and reflection, individuals achieve the type of learning that has meaning for themselves and their work. It is related to what they do, since it is what they do.

Teachers want to know about learning. In their ambition, they often go beyond the simplicity of how one learns – socially, in community, through behaviors. In order to avoid going beyond this simplicity, teachers must "become reflective with regard to our own discourses of learning and to their effects on the ways we design for learning" (Wenger, 1999, p. 9).

Mitchell and Sackney's (2000) work in tracing relationships through network analysis suggested that strong ties promote conservatism and stability, and weak ties promote variability and challenge. "When network analysis reveals a high degree of similarity within professional affiliations and a high degree of stability in collective professional narratives, it should serve as a signal to educators that personal capacity may be languishing" (p. 25). An educator with a balance in strong and weak ties would then, have the best of both worlds – stability and comfort, as well as conflict and challenge.

Developing personal capacity is not new. Peter Senge's (1990) work on the five disciplines of learning organizations described an emphasis on the personal capacities within successful organizations, but that there is a necessity to view the organization as a system incorporating the personal as well as organizational components. Senge emphasized that the development of a personal mastery is necessary for organizational success, and that it is necessary for the individual to learn, insomuch as individual learning is necessary for organizational learning.   Senge stated that tapping into the human capacity for personal growth and learning allows an organization to achieve success. This learning involves not only a superficial vision setting, but rather an internal, mental struggle when he explained that learning for personal mastery is more than just an acquisition of knowledge, rather it is an

acknowledgement of what Senge called *creative tension*, "the juxtaposition of vision (what we want) and a clear picture of current reality (where we are relative to what we want)" (p. 142). It is by generating and sustaining creative tension that we may achieve personal mastery. Generating and sustaining creative tension is also the engagement of the mind – allowing one the opportunity to deconstruct and reconstruct where one is and where one wants to be. Personal mastery involves a search for *truth*. This truth does not refer to an ultimate piece of knowledge;

> Rather it means a relentless willingness to root out the ways we limit or deceive ourselves from seeing what is, and to continually challenge our theories of why things are the way they are…specifically, people with high levels of personal mastery see more of the structural conflicts underlying their own behavior. (p. 159).

Senge (1990) laid out an interesting oppositional pairing between *willpower*, the traditional definitive term for success, and *personal mastery*. He suggested that willpower is simply volition to go in one direction, straight toward a goal, relentlessly, without examination, hesitation, or altering the course. The problem with willpower is that it "often leaves the underlying system of internal conflict unaltered" (p. 158). Personal mastery, however, involves facing one's underlying beliefs, so that if there is a conflict that arises through that creative tension, then it is the beliefs that must be changed. The process of deconstruction and reconstruction occur to create an alignment between espoused theory and theory in-use. Senge stated that "(s)tructures which we are unaware of hold us prisoner" (p. 160), meaning that once there is a change in beliefs, there is a new awareness that allows us to change our behavior, rather than allow unexamined beliefs to dictate us.

Cognitive Capacity and Mental Models

Senge (1990) described the phenomena of mental models as those ideas or perceptions of reality that one interprets subjectively that influence one's future views of reality. Mental models shape perceptions. They are simplifications of the world, when, if left unchallenged, prevent one from seeing changes in the world, the environment, oneself. Much like perceptions, Dickmann and Stanford Blair (2002) outlined the power of mental models or perceptions and how shifts in these perceptions influence one's view of reality. Using the historical work of Louis Pasteur (1857), Dickmann and Sanford-Blair wrote a succinct account of how important it is to consider the brain (perceptions or mental models) as a major player in any incident where information affects behavior. They highlighted this affect on behavior through a Louis Pasteur anecdote. Disease was perceived as being caused by a curse, changes in weather, bathing too frequently, or other origins. Then Pasteur discovered that it was microscopic organisms that were the cause of the problem. The discovery itself was important, but "(t)he ultimate impact of this scientific breakthrough, however, was revealed through significant changes in diverse human behaviors" (Dickmann & Stanford-Blair, 2002, p. 5). The society underwent a perceptual shift as they began to deconstruct and reconstruct what they knew about life and hygiene, and this new knowledge transformed how they acted.

Had Pasteur's discovery not been well understood or perceived by the public, that is, if he himself understood the microbiological system, but those in the public could not perceive the impact of the discovery, the result would have been much different. The public would have been provided with information, but may not have perceived it as important or credible. Pasteur would have expected a change in their behavior, but he may have not seen it. Because of a lack

of perception of the importance of the discovery, the brain, acting as the perceiver, analyzer, and affecter, would not have been involved in a deconstruction-reconstruction sense, to make sense of the information, and would not have catalyzed a transformation – a paradigm shift.

With Pasteur's discovery, there was a major cognitive shift – a change in mental model - so much so that society acted as if there was no other option than to change behaviors and lifestyle. There was no going back to their old beliefs with this new understanding of the world. Had the brain not been involved at the deconstruction-reconstruction level, one would wonder what the extent of the behavior change would have been.

Dickmann and Stanford-Blair (2002) created a model to illustrate the influence of information to the brain and the influence of this deconstruction and reconstruction on perceptions or mental models. This model is represented in Figure 4.
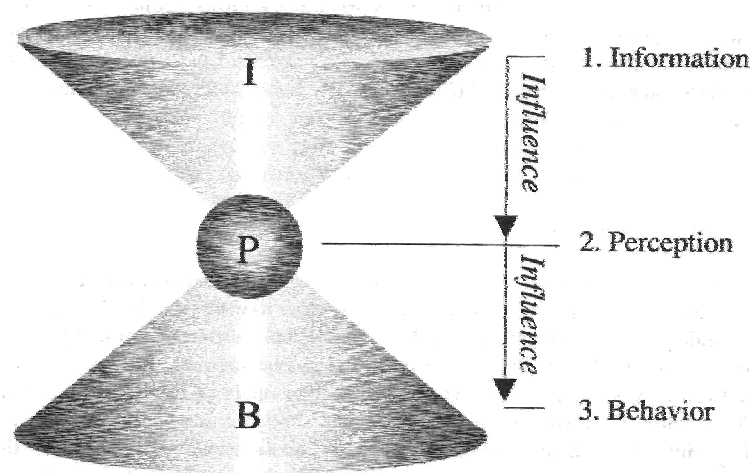
Figure 4. The influence of information to the brain

According to Dickmann and Stanford-Blair (2002), "(l)eadership attention to breakthrough information about the brain and the nature of intelligence is appropriate. It presents an opportunity for leaders to better understand and engage the intelligence of self and others and, thereby, more effectively influence human responses to the challenges of the 21st century" (p. 10). Possessing an understanding of the power of perception and mental models as a leader in education is to possess the key to change.

Mental models play a large role in the ways that individuals function and perform in an organization. They are a force, according to Duffy (2003), that makes up the "unspoken, unacknowledged, and most times unrecognized assumptions that guide our actions in ways that can be productive – or destructive" (p. 30). These mental models influence the ways that school districts perceive and act in their worlds. Although not seemingly problematic, what is difficult is the ability to deconstruct old mental models and create new ones. One often experiences mental model block, preventing adaptation to change by creating new models. According to Duffy, mental models are difficult to change because one resists new information by choosing to adapt to using what one already knows. If the information is completely new, three things can happen: (a) a new model may be made to encompass the new information, (b) the information may be discarded completely, or (c) the old might be discarded and the new might be accepted. Of course, the third event is the most significant challenge is discarding existing mental models for new ones is a difficult task to do. Like a child throwing out a favorite "blankie" for a replacement, the comfort of the old is gone, without necessarily enough time to be comforted by the new.

Existing models are often the largest mental block to change and innovation. "Even after abject failure, some will attribute their failures to an external event or person, instead of recognizing the inadequacies of their personal and organizational mental models" (Duffy, 2003, p. 31). What is necessary is an ability to unlearn (deconstruct) and develop new mental models (reconstruct). Duffy claimed that schools must realize that many current models are no longer appropriate, that the bureaucratic structure of school divisions often prevents new models from developing, and that political pressure from administrators, unions and colleagues often prevent unlearning. One of the key aspects of deconstruction is developing within individuals an ability to think about thinking, or metacognition. This process allows mental models to become malleable and less structured, and allows individuals to delve into the area of *deuteron learning*, or double loop learning, which will be discussed shortly.

In his work on reform in schools, Duffy (2003) emphasized that there are several strategies that can be used to help educators learn new mental models. Some of which are: double-loop and deuteron-learning; conversation theory; dialogue; evaluative inquiry; principles of feedback and reinforcement; social learning theory; and situated learning. These topics are central to the development and understanding of the implementation and purpose of learning communities and the personal and interpersonal capacities therein. These strategies also influence individual learning and behavior.

Double-loop and deutero-learning

Argyris and Schon's (1978) theory of single and double loop learning opened a venue for understanding both shallow and deep change. Similar to Duffy's (2003) theory of adaptation versus transformation, single and double loop learning described the level to which personal

change takes place in response to environmental change. In single loop learning, people make slight or moderate changes to their actions in order to accommodate environmental change, but they are not engaged in understanding or realizing why they are doing so. Argyris and Schon called these adaptations to external change. Double loop learning, however, is a deconstruction and reconstruction of personal and organizational mental models that are involved in change. Done in the face of new information, double loop learning involves examining current mental models and one's perceptions related to them, and making transformational changes as a result of new information.

Argyris and Schon (1978) took single and double loop learning a step further as well, with their description of deutero-learning. Deutero-learning involves not just deconstruction and reconstruction, but an actual new learning how to learn. Similar to metacognition, or thinking about thinking, deutero-learning describes the process of learning how to learn. Although these theories are categorized in the cognitive capacity, their application occurs in the developmental and behavioral components of personal capacity.

Conversation Theory

Conversation theory assumes that "learning occurs through conversations about a subject that make knowledge explicit" (Duffy, 2003, p. 35). These conversations can be about the subject or about the learning. Conversations can be done in a variety of ways, formal or informal, and about a variety of topics. Similar to social learning theory, conversation theory gains momentum when participants receive new information and discuss it in relation to their work. As the information circulates and members compare it with existing information (either consciously or sub-consciously), and learning occurs. This learning is then reinforced,

questioned, or dismissed as it is brought up in conversations between and among members of the group. Conversation theory gains its strength or appeal through the idea that it encourages bringing knowledge that is sometimes tacit to the forefront to be explored and considered. Conversation theory also has applications under the developmental component.

Dialogue

Unlike conversation theory, dialogue is a focus on the actual mental models and behavior that people display. Dialogue is not the Platonic dialogue intended to bring two opposing sides to agreement, rather it stems from the work of Bohm, Factor and Garrett (1991) as an attempt to bring to the surface and explore mental models to allow for deconstruction and reconstruction. Dialogue is used, in this sense, as the spontaneous conversations that people have about a particular subject. In its purest form, dialogue is the spontaneous debate and back and forth sharing among two or more members that stimulate learning to occur. Perhaps like Plato, one member is trying to sway another into thinking in a common way, or it may be for the purpose of expression, even though the speakers may not have articulated these thoughts prior to the conversation. However it may be used, dialogue is a social form of understanding thoughts and behaviors through conversation and helping individuals to make sense of their settings.

Evaluative Inquiry

The process of evaluative inquiry invites educators to examine the positive and the negative aspects of what they do. It is a process by which they focus, apply, and learn how to inquire about personal methods and strategies. External members are involved in a reflective dialogue and probing of current or potential strategies and models. In education, for example,

evaluative inquiry would entail that someone would be asked to lead a systematic inquiry into what a school is doing, why they are doing it, what is working and what is not working. This inquiry is an opening into deconstructing the reality that exists in the school, and a potential creation of an awareness of what needs to happen in order to improve it.

Feedback and Reinforcement Loops

The process of feedback and reinforcement in an organization is largely dependent on the skills of the leaders. The leaders or developers provide feedback to the participants in an effort to improve their learning. Although not as deep as the metacognitive or dialogue strategies, this strategy may be effective in introducing the ideas of thinking about thinking, and getting ready to deconstruct personal learning.

An example of a feedback and reinforcement loop could be as simple as an evaluation or supervision system based on a professional goal. The participant or teacher would set a goal, involving the leader or administrator as a supervisor. The supervisor would then assist the teacher in monitoring the goal and provide feedback (or helping review external feedback). According to the results of the feedback, the participant could then maintain what was effective and make adjustments to what was not. Monitoring such as this can also be done at a personal level, using existing data, or at a collaborative level, using peers as co-supervisors.

Cognitive Change and Social Learning

Similar to the Evers and Lakomski (2000) model on socially distributed cognition, and integral to the development of an educator, social learning theory rests on the idea that in groups, educators share their ideas and perceptions. In the goal of reaching consensus, all members hear

the others' points of view and consider each other's perspectives. This strategy improves communication among groups or organizations, and may open one's mind to seeing other points of view, potentially opening the doors to examining personal constructs.

Learning occurs through social interaction because it is situated (Lave, 1988). Learning occurs through the culture, time, and space in which the person is acting. The concept of social learning has many applications. Applied to the classroom, situated learning would dictate that students learn through doing, rather than solely through listening. Applied to professional development, situated learning would dictate that in order for deep learning to take place, educators must learn as they do, such as through action research, not as they are told, such as in a traditional in-service. Applied to leadership, situated learning would dictate that staff must be involved in making the leadership decisions, rather than just being told what it is they are to do. Wenger's (1999) Communities of Practice, rests on the notion that, given the opportunity as a group, individuals will support, interact, engage, debate and learn from each other. This idea implies that learning occurs among and between members and is internalized by each, allowing them to create new mental models because of the interaction.

Social Learning and Metacognition

Evers and Lakomski's (2000) work on socially distributed cognition opens a curious passageway into the study of metacognition and development. The two scholars took an interest in studying the work of several other theorists to develop a model of cognition which incorporates how people learn in individual and social settings. Some of their work included studying Artificial Neural Network (ANN) research, which uses computers to model learning similar to activity in the brain.

According to ANN, an input (information) is entered into the brain. This input is considered to be an *activation*. This activation is attracted to certain *nodes* in the brain, which are centers of information related to the activation. The connection between the activation and each node is considered to be strong or weak depending on the brain's perception of the activation. A *weight* or correlation is attached to the connection. A strong connection would mean that the activation *coheres* well with the information in that node (the receiver understands what they have taken in), and a weak connection would mean that it does not cohere well (the receiver doesn't recognize the information or its relative importance). The activation moves
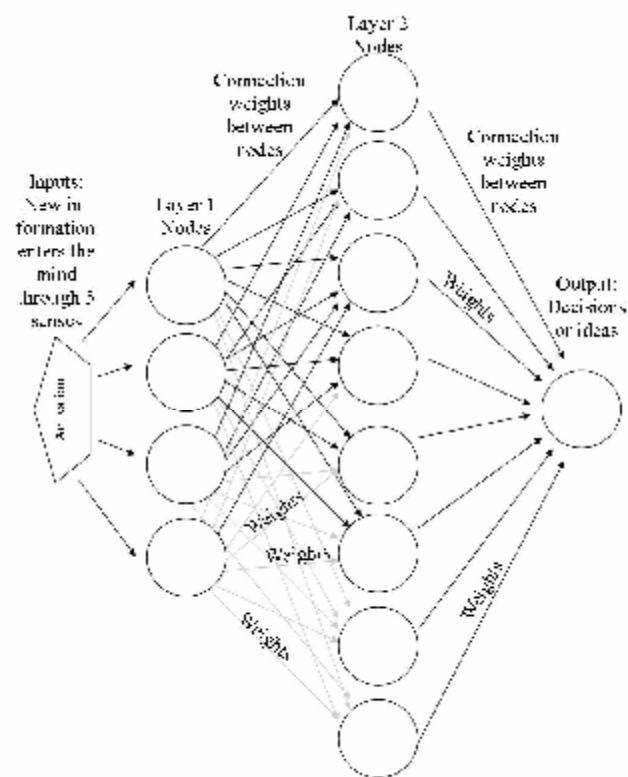
Figure 5. Artificial neural network model used to depict individual learning.

through to the nodes in which there is a strong coherence, but is not picked up by the nodes with a weaker coherence. The activation passes through two layers of these nodes (with several nodes in each layer). At the end of the net of nodes and connections, the output represents the *answer* to, or result of, the activation. Figure 5 is an adaptation of Evers and Lakomski's model to depict learning in an individual.

The brain then learns from patterns of activations that pass through the system. A certain input will usually result in pointing to a certain output because the connections between the nodes become stronger and stronger with each input. The brain, then, is said to learn from experience. "Learning will be epistemically progressive where coherent adjustments to the net minimize the gap between the feedforward expectation and feedback from experience" (Evers & Lakomski, 2000, p. 30). The brain thus becomes an *expert* through increased exposure to activations and increased cycle through the neural net.

Although this model may be simplistic in explaining thought, it provides a basic framework for understanding thought processes and from which one can begin discussions around knowledge and learning. Evers and Lakomski stated (2000) that "simplifications can be powerfully revealing, even to the point of showing how to support the relationship between evidence and truth" (p. 98). The study of ANNs, when applied to individual learning, provides an understanding of how experiences and opportunities shape the learning in an individual.

ANNs and Social Learning

Evers and Lakomski (2000) took the simple model of ANNs to explain learning in groups, developing their theory of socially distributed cognition. They contended that learning does not happen solely in the human head, but that it also happens in the contexts in which we

live. The theory of learning is "aided by contemporary connectionists who have begun to explore cognition beyond the individual skull, and to consider cognition as *distributed* between other knowers and their material contexts" (p. 37). Social learning has become an area of much focus and study, often referred to as *situated action*. Situated action is that which "stresses the importance of the construction of human cognition in the everyday cognitive practices of humans and rejects the view of cognition as uniquely symbol processing" (p. 3). This means that learning occurs in the social environment. It is not, like educators once thought, individualistic and contained; rather it extends beyond the individual, in the environment. Evers and Lakomski concluded that ANN research has provided an understanding of socially distributed cognition. They explained:

> We now have a richer account of learning which may be said to consist in the changing of the weights of enacted patterns of activation interaction with whatever external features, linguistic or otherwise, make up the specific learning situation, including those in organizational contexts. The structures and processes of our places of work are literally extensions of our minds, and reciprocally shape what we know, and vice versa. (p. 84).

Evers and Lakomski's theory of socially distributed cognition is a comparison of the social dynamics of learning to the ANN research. Rather than simply limiting the discussion of ANN research to the human brain, one can apply it to the social settings. If one considers the same model of the ANN in the brain, but applies it to a group of individuals, one can understand the similarity. Consider the activation to now consist of new information brought into a group either

through new research or a new individual in an organization. This activation will cohere at a high level or a low level with different individuals in the organization.

One could consider individuals as the nodes. The coherence level between individuals (nodes) is the attraction of the information to individuals in the net. As the activation passes through people and the information is shared, it finds itself moving through the net. The individuals with the information who have a high coherence to other individuals (the second layer of nodes) will further discuss, deconstruct, and spread the information. When the activation has gone through the net, the result of the interactions with the information is the new learning. Learning has happened in the organization, and learning is distributed throughout the organization. Knowing that learning has happened in the individual, but looking at ANNs through the theory of socially distributed cognition, one can see that the learning has occurred in the group, and has also been distributed among the group. This simple model brings understanding to both the how of organizational learning, as well as to the power in organizational learning. Figure 6 is a further adaptation to Evers and Lakomski's model of socially distributed cognition, applying the theory of ANNs to socially distributed cognition.

This social system of learning has also been described by Fullan (2001) in his work on school reform. He described social learning as that which takes us from chaos to coherence. He referred to the necessity for a chaotic, discomforting environment to keep creativity flowing, but added that in this process, members of an organization must seek to establish coherence because disequilibrium is only valuable if coherence can be attained. In his argument, Fullan used the concept of moral purpose as one of the drivers of conflict, and ultimately of reform. He stated that everyone has a moral purpose, an inspirational *making-a-difference* driver for behaviors, but
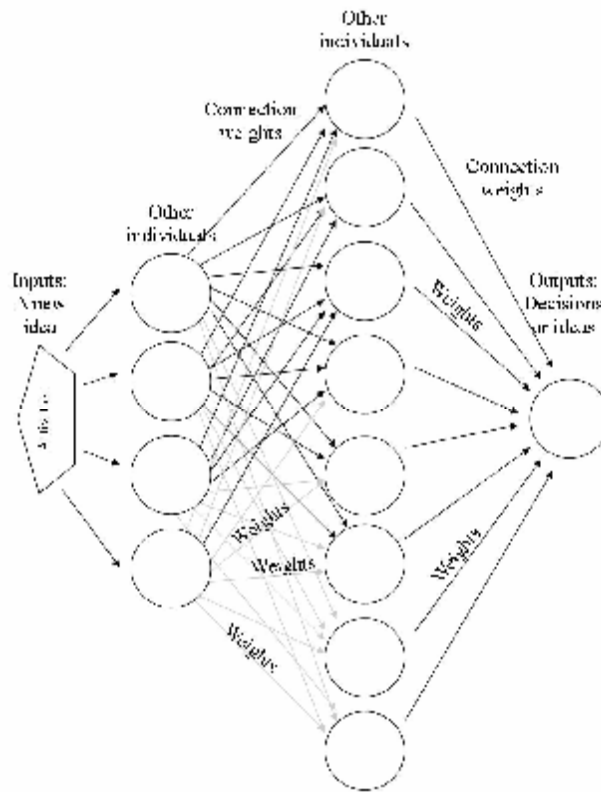
Figure 6. Artificial neural network model used to depict socially distributed cognition.

that goal achievement in terms of moral purpose is attained when one's moral purpose is aligned

with one's behavior. Strategies must be accompanied by actions. Fullan also observed that

"(w)e are more likely to learn something from people who disagree with us than we are from

people who agree" (p. 41). He reminded us that resisters to our ideas usually have something

important to tell us, things that we may not have seen. In combining the ideas of conflict to

coherence, and moral purpose to reform, Fullan's message may be that in social settings,

conflict, when combined with moral purpose, will lead to effective reform. The goal in such a

situation would be to act in ways that would lead the group to a state of coherence.

Palmer (1998) shared a similar vision of community. He emphasized that there are multiple views of community in society, and that within each view, one can find purpose to their work. The four models of community are: the therapeutic model, where individuals grow in intimate relationship with one another; the civic model, where one builds relationships with and shares territory among strangers for a healthy politic; the marketing model of customers and products, where society is measured by the goods it produces and its accountability for them; and the comprehensive model, in which members of society interact with one another. Palmer advocated that the comprehensive model of community is one that embraces and guides the core mission of education. It reaches deeper into the ontological and epistemological assumptions about what one knows and how one knows it. "Reality is a web of communal relationships, and we can know reality only by being in community with it" (p. 95). This theory, according to Palmer, does not just reside in education. Rather it can be seen in the physical world. Particles in physics, for example, act differently when they are near one another than when they are separated. They react to the existence of one another and do not behave as though they were isolated. Once separated, the particles behave differently.

Akin to the social world, individuals all leave room for one another and impact one another so much that capacity increases as we are in community with others. Palmer argued that his model of community is a community of truth that embraces both the great web of being on which all things depend, and the fact that our knowing those things is helped, not hindered, by our visible connections to human forms of being – with their opportunities for intimacy, civility and accountability – but our invisible connections to nonhuman forms as well. It is a model of

community with enough capacity to carry the educational mission of knowing, teaching, and learning.

Palmer (1998) explained his model using two figures. The first figure is the ontological positivist model, which depicts a mythical knowledge that is "out there", to be imparted onto amateurs. This model is an objective model where truth flows down to those fortunate enough to receive it. He stated that this model is unlikely in that knowledge does not happen this way, and it deforms how we educate. The second is the ontological constructivist model, which represents the subject in the centre and the knowers around it. This subject exists in relationship with all knowers, and the community tries to understand it through shared observations and interpretations, through dialogue and debate, where everyone is learning and growing even through conflict (where we test ideas in the open) versus competition (where we secretly try to outsmart one another). "Truth is an eternal conversation about things that matter; conducted with passion and discipline" (p. 104). Palmer insists that truth is never objective – that it keeps changing, so it can never be stated as a conclusion. Rather it exists among members in a community that keeps testing old truths and bringing new ones in. Figures 7 and 8 illustrate the two models. The first model is the ontological positivist model, indicating that knowledge is to be imparted onto learners. The second model is of the ontological constructivist model, indicating that knowledge is to be acquired among learners together.

By looking at the theories behind personal capacity, there is an opportunity to consider various approaches to understanding the impact of social interactions on the educator, and thus, on educational change. In bringing together the ideas of social learning and socially distributed

cognition, one begins to get an understanding of the importance in understanding teacher

metacognition.
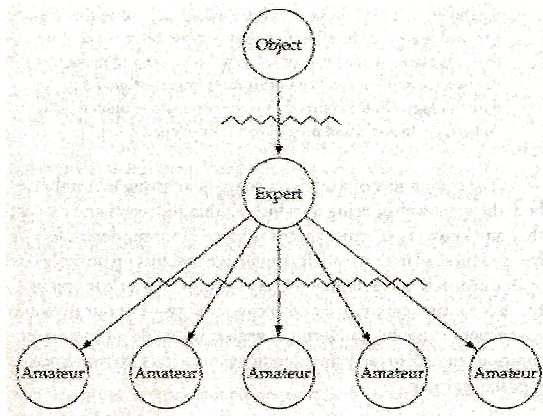
Figure 7. The positivist model of knowledge
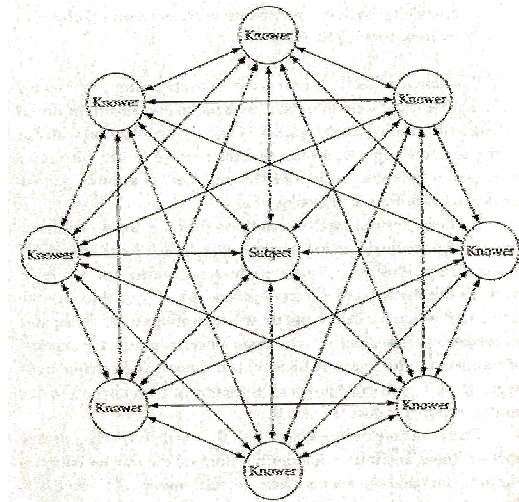
Figure 8. The constructivist model of knowledge

The Action Research Spiral

Action research, defined by Kemmis and McTaggart (1988), is "participatory,

collaborative research which typically arises from the clarification of some concerns generally

shared by a group" (p. 9). Being participatory, action research plays a role in social learning

theory. Through action research, people are able to "describe their concerns, explore what others

think, and probe what it might be possible to do" (p. 9). Kemmis and McTaggart used Lewin's

(1946) approach to action research to explain its success in improvement initiatives. They said

that by breaking the job of improvement down into parts, groups are able to find success. Lewin

created the Action Research Spiral to describe the stages to improvement. Through the stages of

(a) planning, (b) action and observation, and (c) reflection, groups are able to carefully see an improvement initiative through to its success. Because members are flexible and responsive, members plan, act and observe, and reflect together so that they are able to plan for the next cycle.

Figure 9 is The Action Research Spiral (Lewin, 1946). The key to the entire spiral is the concept that the research is done more systematically and rigorously than in day to day work, and to use the previous action to build upon the plan for the next action. Underlying the spiral are the ideas of a *group decision* and a *commitment to change*. Kemmis and McTaggart (1988) outlined key characteristics of the processes of the action research. Not only does action
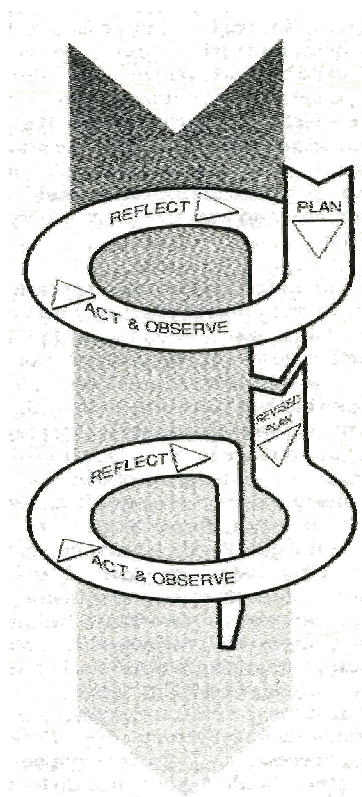
Figure 9. The Action Research Spiral (Lewin, 1946)

research result in an activity that improves a situation, it also results in an activity that improves

the understanding and knowledge of the people within it. It is through the interactions of the

people that changes, reconstructions, and learning take place. It affects both the individuals and

the culture of the group. It also affects deep personal change through reflection. In summary,

action research is a collaborative, participatory form of research and learning. It is an inquisitive,

systematic, and enlightening method of learning. It also involves self-reflection, forcing

members to listen to others' perspectives and making informed decisions that might break them

from their practices and assumptions.

Summary

"Good teaching cannot be reduced to technique; good teaching comes from the identity

and integrity of the teacher" (Palmer, 1998, p. 10). Educational literature increasingly includes

illustrations of the fact that the traditional institutional delivery of education no longer meets the

needs of today's students. Scholarship epistemology is the process of teachers examining and

reflecting on what they do and say to gain the skills to lead their students in doing the same

(Schon, 1995). It offers greater learning through thinking and metacognition.

Integral to this new scholarship epistemology is the act of self reflection and

metacognition to understand the gap between what one does and what one says one does. The

knowing-doing gap (Schmoker, 2005), Schmoker identified that one of the greatest challenges in

education is that teachers do not do what it is that they already know. Through the constructive

process of deconstruction and reconstruction, however, teachers increase their learning and

develop a better understanding of how they learn. This process enables them to reduce the

knowing-doing gap, theoretically improving the practice of teaching and learning. Hatala and Hatala (2004) claim that with greater understanding of oneself and the nature of the self, the more effective one will be at teaching and learning. Senge (1992) called this phenomenon personal mastery, and implied that a greater discipline and knowledge over one's thought and actions brings greater learning.

The use of a learning community is a potential opportunity for teachers to take risks and accept challenges to deconstruct and reconstruct their knowledge in a collaborative, trusting, and wholistic environment. Through Sturner's (1987) model of the personal cognitive change process, one can understand the metacognitive stages that a teacher may go through when presented with change and respond to it.

The search for knowledge includes the internal, as well as the external search process. Using Evers and Lakomski's (2000) model of socially distributed cognition, one can begin to glean an understanding of the mental and social elements at work in this learning process, as well as how individual metacognition and social cognition. Social cognition takes advantage of both strong and weak ties (Mitchell & Sackney, 2000) as these ties work in balance to produce cognitive and behavioral change in an individual.

Perhaps through a closer look at metacognition and the process by which teachers recognize and accept the challenge of change, a potential contribution to the research can be made regarding the impact of the process of metacognition in the education sector.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

An intellectual is someone whose mind watches itself. -Albert Camus

Reality exists as "constructions existing in the minds of people…and can be studied only in wholistic, and idiosyncratic, fashion" (Guba & Lincoln, 1999, p. 142). The epistemological basis from which this research unfolded rests on the assumptions that there are multiple realities that exist in the minds of people that shape their behavior. Rooted in the naturalist constructivist paradigm, this study was a phenomenological investigation, which employed hermeneutics as a method to understand the participants' point of view, and the context of the experiences in which they have lived (Kincheloe & McLaren, 2005). Philosophically, this study was based on the Husserlian concept of intentionality, where reality of something cannot be divided from one's consciousness of it, and its reality can only be understood through the meaning that one gives to it (Creswell, 2007). My intention was to determine the essence of teacher metacognition within the context of successful learning communities.

The behavioral phenomena or realities of interest in this study were the metacognitive processes of the teachers, which are the result of their realities, and, when these realities were studied, gave shape and meaning to their underlying perceptions of the world. Since perceptions of reality influence behavior, I was interested in the participants' perceptions of reality.

The world is both subjective and objective, therefore, requires interpretation as well as measurement (Merriam, 1998). The value or worth of a study, in fact, "is the degree to which it generates theory, description or understanding" (Bogdan & Biklen, 2003, p. 33). This self-reflective, subjective study required that a qualitative methodology be employed. The qualitative

nature of the study provided an opportunity for data collection and interpretation. The research was valuable in providing an understanding of the reality or truth as it was perceived by those experiencing it. Bogdan and Biklen used the analogy of the concept of *forever* from the physics professor's view as compared to that of a child. The physics professor would argue that forever literally means forever. His world and experiences have allowed him to understand that the earth's existence in the past is included in the equation of forever, and so its existence in the future. To the child, however, forever may be interpreted as the period of time that he has to wait for his parents to take him somewhere, or for a birthday to arrive. Although seemingly minute in nature, the perceptual differences may perhaps forestall misunderstandings between people, or may remind one to avoid making standard definitions for terms or ideas. "Qualitative researchers believe that approaching people with a goal of trying to understand their point of view, while not perfect, distorts the informants' experience the least" (Bogdan & Biklen, 2003, p. 23). Part of capturing this perception was the quest to find the story and the depth behind the perceptions.

Research Rationale and Design

My decision as to which method of research to employ for this study was determined both by the nature of the study and by my epistemological assumptions as a researcher. "It is the general contention of naturalists that the axioms of naturalistic enquiry provide a better fit to most social/behavioral phenomena than to the rationalistic axioms" (Guba and Lincoln, 1999, p. 141). The purpose of this study was to investigate teacher metacognition within the context of successful learning communities. Because I wanted to take a retrospective look at individual teacher experiences in successful learning communities, a phenomenological approach was

required, taking on the Husserlian view that an understanding of the subjective experience is the source of the knowledge of objective phenomena (Creswell, 2007). "Researchers in the phenomenological mode attempt to understand the meaning of events and interactions to ordinary people in particular situations" (Bogdan and Biklen, 2003, p. 23). A phenomenological approach was suited to this research in order to acquire the meaning or representations of several individuals, rather than a single individual, such as in a narrative inquiry in order to "grasp the very nature of the thing" (van Manen, 1990, p. 177). The representations, then, were collected into "an essence of the experience of all individuals" (Creswell, 2007, p. 58), giving knowledge or wisdom to theoretical explanations.

The Participants

According to Moustakas (1994), a hermeneutical phenomenological study requires that data must be collected from individuals who have experienced the phenomenon. This study required purposive sampling. Analogous to purposive sampling, "criterion based sampling requires that one establish the criteria, bases, or standards necessary for units to be included in the investigation (and) then finds a sample that matches these criteria" (Merriam, 1998, p. 48).

The successful learning community was important in that it provided a potential environment in which a teacher may have experienced metacognition. Participant selection for this study involved a school division superintendent and a coordinator, who were considered the knowledgeable experts, in identifying schools with successful learning communities based on reputation and knowledge of learning communities within the division. These learning communities were identified as "a group of educators who work collaboratively with and learn

from one another" (Dufour, Dufour et al., 2005, p. 9) and who ultimately brought about tangible or noticeable gains or improvements in student learning.

Based on the superintendent and the coordinator's recommendations, principals in each nominated school were asked to identify, within their learning communities, individuals who possessed the following attributes: (a) a certified classroom teacher with at least five years teaching experience, (b) a member of a learning community that is perceived as successful, and (c) a member of a learning community who may perceive the learning community as successful. These individuals were considered to be potential participants.

Following this process, I contacted each potential participant to determine their suitability for the study, and three participants were chosen from those available for research. In order to select those participants from those nominated, I used a purposive sampling pre-interview. According to Merriam (1998), "purposive sampling is based on the assumption that one wants to discover, understand, gain insight; therefore one needs to select a sample from which one can learn the most" (p. 48). From those educators nominated, each was contacted by telephone and was asked to answer the three short pre-interview questions, included in Appendix B. Following this pre-interview, the selected participants were asked to participate in the research using the recruiting letters included in Appendix A.

Two in-depth semi-structured interviews were required with each participant, in addition to short informal meetings, e-mails, and telephone conversations. Time and opportunity were required in between interviews so that participants could reflect on the discussions and topics to be examined.

The Setting

The request for access was made to one school division; however, participants were selected from different successful learning communities. The setting for the interviews was not a major factor in the study because the information desired was about their thought processes rather than their physical environment. Meaning, language, and thought (Blumer, 1969) were accessed through descriptions and metacognition. Interviews were conducted wherever the participant felt comfortable and had the opportunity to speak without distraction. Each interview (except the short initial pre-interview) lasted about one to one and a half hours in duration. Other contacts with the participants included short informal meetings, e-mails, and telephone conversations.

Data Collection Phases

Data collection for this study occurred at the pre-interview, the first semi-structured interview, the second semi-structured interview and short informal meetings, e-mails, and telephone conversations with three participants. Approximately eight hours was spent with each participant over a period of two months. For the purpose of clarity and brevity, however, the contact with the participants from this point forward in the dissertation will be referred to as the first interview, to collect the participants' experiences, and the second interview, to access the thinking behind their thinking.

The data collection and analysis was done in three stages including (a) the initial interview, (b) the horizonalization and phenomenological reduction, and (c) the metacognitive interview. The first stage was to collect the participants' stories as they described them, involving a look into their experience as a "prereflective description of things just as they

appear" (p. 91). This data were collected through a qualitative interview, using questions to bring out the who, what, where, when, and why of their learning community experience. The second stage incorporated horizonalization and phenomenological reduction to uncover what was horizonal and thematic. These processes occurred together, because as one engages in horizonalization, data that is not relevant to the topic is naturally reduced. As Moustakas (1994) described, "in phenomenological reduction, the task is that of describing in textural language just what one sees, not only in terms of the external object but also the internal act of consciousness, the experience as such, the rhythm and relationship between the phenomenon and self" (p. 90). For this research, the initial interview data were swept and examined for key moments, or horizons, where the participant may have been engaged in deeper thought through critical moments in their experience. These horizons were then used to formulate questions for the third stage of the data collection, which was consisted of an in-depth metacognitive interview.

The horizonalization and phenomenological reduction made it possible for the participants to focus on one key area at a time during the second metacognitive interview. This focus made it possible for them to solely describe their thinking, and their thinking about their thinking behind the events, as they brought into consciousness the experience of their membership in a professional learning community during the second metacognitive interview.

I describe the processes of the three stages of the data collection below.

Describing the Experience: The Initial Interview

I was interested in discovering the participants' cognitive experiences. According to Bogdan and Biklen (2003), "(t)he qualitative research tradition produces an interpretation of reality that is useful in understanding the human condition" (p. 24). It was important to

recording the participants' world as they saw it, and maintain the legitimacy of the research. The story, taken as a narrative of the participant's experience, was interpreted as an instance of social action, and was analyzed as such to draw meaning and interpretation from it (Atkinson & Delamont, 2005). Being aware that qualitative research "has become increasingly fragmented" (Atkinson & Delamont, 2005, p. 821), I knew it was important that the data collection and representation stay as true to the source as possible. For this reason, the collection of the stories as the participants saw them was an integral part of the study.

I used the semi-structured interview format to initially collect individual stories of experiences in the successful learning communities. Moustakas (1994) recommended that broad questions be used at this stage so that data may be gathered that leads to a description of the experiences, and to an understanding of the phenomenon. I was interested in the how rather than the what; therefore it was imperative that guiding questions were used to encourage the participant to share stories of success. The semi-structured interview questions used for this stage are included in Appendix B.

Although not intended to enter the realm of participatory research, the hermeneutical and metacognitive nature of this research required competent questioning skills on my part. As the researcher, I sharpened my skills in asking metacognitive questions with respect to knowing when to ask them, knowing when to wait, and how to recognize opportunities to probe throughout the interviews. I conducted a pilot of the process of metacognitive interviews with a colleague so that I could hone skills in the area of accessing the language of thought as well as the language of recall.

Reducing the Data: Horizonalization and Phenomenological Reduction

Following the first semi-structured interview, the interviews were transcribed, and I used the processes of horizonalization and phenomenological reduction to uncover horizons - key areas upon which I based questions for the second, in-depth metacognitive interview. The process of horizonalization included scrutinizing each transcript for key moments or events from the descriptive interviews which may have triggered deeper thinking by each participant. I followed Moustakas' (1994) approach to phenomenological data analysis. Moustakas recommended that researchers examine the data to uncover significant statements that may lead to an understanding of what the participants experienced. Moustakas termed this initial analysis horizonalization, maintaining that these key statements all have equal weight and significance, and they must be identified to provide an initial understanding of the participants' experiences.

I conducted this examination with data from the first interview in order to create subsequent questions that invoked participants' thinking about their thinking during the second interview. The questions were intended to assist participants in uncovering their thinking at certain stages in the learning community progression. In preparing for the second interview, I highlighted these details so that they could be reread to the participant as described during the second interview, with the purpose of staying as true to the phenomena as possible. I also phrased the questions in such a way as to encourage the participant to describe their thinking behind each horizon.

Revealing the Thinking: The Metacognitive Interview

The metacognitive nature of the study made it impossible to set out exact pre-formatted research questions for the second interview; however, "(r)ather than approaching measurement

with the idea of constructing a fixed instrument or set of questions, qualitative researchers choose to allow the questions to emerge and change as one becomes familiar with the study content" (Krauss, 2005, p. 760). This third stage provided the opportunity to uncover the how and why along with the what (Moustakas, 1994) initiated from the participants' stories. Preliminary possible questions for this stage are included in Appendix B.

Participants were asked to explore their thoughts and perceptions as they experienced membership in their successful learning community. I was interested in this contemplation or internal experience. Because the study was retrospective, I asked participants to recall and examine their thinking at various stages of the experience (identified through the horizonalization), depending on what they initially shared through their stories, and what was highlighted from the first interview. Following this interview, I made follow-up phone calls as required when I needed clarification on some of the data. These calls were very short and were made to simply ensure that what I interpreted was correct.

To remain as true as possible to the original data, I phrased the questions using their words from the initial interviews, encouraging them to share what they were thinking at that time from their frame of reference and their experience.

Data Analysis

The first part of the data analysis entailed a first order analysis. That is, data was laid out openly and unanalyzed. In order to stay true to the complex data that I collected, I analyzed it carefully. I read through the transcripts several times to "obtain an overall feeling for them" (Creswell, 2007, p. 89). Not only did the explicit words require analysis, but so too did the social and cultural aspects related to the data. I began by studying each participant's story as

they shared it with me and I prepared a description to share the *essence* of their experience of belonging in their successful learning community. These textural descriptions are presented in chapter four, unanalyzed. These descriptions are true representations of their experiences as were described in the first interview.

I then identified themes from the statements to present the second set of data. To maintain clarity at this stage, I analyzed the transcripts for areas in which the participants described their thinking, and presented this thinking as it was relayed to me. The difference between the first set of data representations and the second was that I reduced the second set to only of that data in which the participants revealed their thinking about their thinking. This set of data, presented in chapter four as well, is also unanalyzed.

Next, I employed second order analysis in an attempt to arrive at an understanding of the phenomena. I presented data according to the themes discovered. In contrast to presentation of the first order data, this analysis is presented with a structure. Specifically, I discovered four underlying themes. I presented this analysis in chapter five.

In addition to the data analysis, I asked a colleague to audit the data for themes. We had a conversation regarding the data. This conversation provided me with confidence that the underlying themes that I recognized were the same or similar to hers, and ensured that what I recognized remained true to the data. All data were validated by participant member-checking and accuracy was verified prior to data inclusion in the dissertation.

Trustworthiness and Verisimilitude

Each interview session was audio-recorded, and the interviews were transcribed. I sent a copy of the transcripts to each participant for member-checking. Participants had an opportunity

to read their transcriptions, check for accuracy, and ensure that the transcriptions reflected what it was they intended to express. They had the option to add or delete any information as they wished prior to returning the transcriptions and the signed transcription release form.

The participants had an opportunity to share their stories and to further examine their thoughts. Because I was present listening, asking questions, recording and observing, I was an instrument to the data's verisimilitude. As Merriam (1998) stated, "because humans are the primary instrument of data collection and analysis in qualitative research…we are thus 'closer' to reality than if a data collection instrument had been interjected between us and the participants" (p. 203). As the participants shared information, I was able to ask for clarification or repetition, and I was able to rephrase questions and probe for information to increase the clarity of the data. Having already indicated my positionality to the interviewees, researcher biases were clarified at the outset, allowing for further transparency of data collection techniques.

Seeking reliability, in the traditional sense, was not a major goal of this study because the nature of this investigation into metacognition was personal and individual. It was possible that the participants' own views may have changed over time. It was, in fact, likely that with further metacognition, the participants' ideas would change; however, I was interested in recording and reporting their stories and thoughts as they explained them at that point in time.

External reliability was also not a major goal of this study. The findings were not intended to be generalizable; however, it is possible that they may lead to more informed decision making in policy and practice.

Ethical Considerations

Application for this research was made to the University of Saskatchewan Advisory Committee on Ethics in Behavioral Science Research and was obtained on January 10, 2008. Consent was requested at the school division level was also obtained. Participants were informed of the nature of the study, the data collection methods, the data analysis techniques, and the dissemination of the information. They were free to withdraw from the study at any time.

I used consent forms for the interviews and data transcript release forms, and I made every effort to ensure confidentiality and anonymity of the participants, and did not include the names of schools, colleagues, administrators and participants in the study.

I included ethical information and letters of approval in Appendices A and B.

Summary

Scholarship Epistemology: An Exploratory Study of Teacher Metacognition within the Context of Successful Learning Communities was a phenomenological study, rooted in the naturalist constructivist paradigm. As a reflective, subjective study, it required that a qualitative methodology be used. This methodology consisted of four phases. The first was the identification of successful learning communities; the second phase was to identify individuals within those communities who perceived the learning community as successful; the third was to have the participants describe their experiences. The fourth phase was to have the participants reveal their thinking, attempting to reveal what the participant was thinking at different times throughout the successful learning community experience.

There were three participants in this study, selected using purposive sampling. Following initial contact, each was involved in two interviews and a series of less formal contacts,

including informal meetings and telephone conversations. In total, approximately eight hours was spent with each participant over a period of two months. The data analysis stage followed the practices for phenomenological research (Moustakas, 1994). The data analysis stage also incorporated first and second order analysis. Verisimilitude was ensured through this study's internal structure. As the researcher, I asked questions as the participants moved through the interview. I asked questions for clarification and verified the interpretation of the participants' statements. Trustworthiness was attained through the interview process, member checking and accuracy validation prior to obtaining the transcript release forms.

CHAPTER 4

LEVEL 1 DATA: TEACHER EXPERIENCES

The purpose of this study was to investigate teacher metacognition within the context of successful learning communities. In order to take a retrospective look at individual teacher experiences, it was necessary to find participant teachers who belonged to successful learning communities, and who perceived their learning community to be successful. The successful learning community was important in that its framework provided a potential environment for teacher cognition. To do this, consultants from the school division identified schools with successful learning communities. Next, principals within each of the schools identified teachers who would likely perceive their professional learning community as successful.

The final two phases of data collection involved a retrospective, phenomenological look at individual teacher experiences in a successful learning community. To do this, first, the context of membership in successful learning communities needed to be articulated by each participant. This study was situated in the hermeneutical field; therefore, it was important that the events were reported as told (van Manen, 1990), so that the participants' lived experiences could be read and understood. I presented these descriptions first in their entirety in this chapter, as they were told. The data needed to stay as true to the phenomenon as possible without reduction (Atkinson & Delamont, 2005). I used semi-structured interview questions to prompt each participant to explain their experience in their successful learning communities.

Next, I used horizonalization and phenomenological reduction (Moustakas, 1994) to sweep through the stories and experiences to identify key places where deep thought may have taken place. I formulated questions based on verbatim portions of the participants' original

stories, and I asked each participant to describe their thinking or contemplation and internal experiences at these key events. During the second interview, I asked the participants to recall and examine their thinking at various stages of their experience, depending on the horizons which I identified through the phenomenological reduction process. Seeking to investigate teacher metacognition within the context of successful learning communities, I intended to use the second interview to uncover the *how* along with the *what* as the individual participants told their stories.

The treatment of the data consisted of level 1 data, described by Giorgi (1985) as original data (unanalyzed) obtained through open ended questions and dialogue; and level 2 data, the researcher's descriptions of the experience based on reflective analysis and interpretation of the participant's account. In order to remain as true to the data as possible, I first presented each participant's story (from the first interview), as well as their thinking behind their thinking (from the second interview) as level 1 data, and laid it out unanalyzed in this chapter. I reserved all analysis and interpretation for chapter five.

Organization

The three accounts in this chapter are the perceptions of the experiences of being a member in a successful learning community, told by three different teachers in three separate learning communities in different schools. These stories include information that participants shared through both interviews, that I wrote to include descriptions of the events, but also to include the participants' thoughts and reflections about the events. The data are segregated according to the participant and grouped according to the participant's story and then the participant's thoughts recognized through the horizonalization process.

Tracey, the author of the first account, was the leader of a middle years (grades 5-8) professional learning community.   Her PLC came about as a response to the school's Learning Improvement Plan (LIP). The LIP was a division requirement for all schools to show improvement around selected goals. Tracey's PLC was focused on guided reading as a strategy to improve reading levels of all students in the middle years. Tracey identified the group as successful through both of its years in existence. Its success in the first year continued in its second year. Tracey was the leader in both years.

Lisa, the second participant, was also a member of middle years PLC. She was not the designated leader, but emerged as an informal leader because of her knowledge and work ethic. Lisa's PLC was driven by a school improvement mandate. Lisa described both years that her PLC had been in operation. The first year was not successful by her initial definition, because the group struggled with loosely set goals and guidelines. The second year, guided by Lisa's experience, her PLC found success. The group's success revolved around its goal of implementing a program designed to improve writing skills in the middle years.

Jacki was a member of a primary years PLC. This PLC was originally driven by the administration's focus on specific learning improvement plan goals; however, with a change in administration, the requirements in its second year became much less rigid. Jacki's PLC shifted from a focus on an area of mathematics in its first year, to a focus on improving reading in its second year. Jacki described the first year as highly successful, but did not share the same feelings about its operation in the second year.

The following accounts are the perceptions of the lived experiences of what it means to be a member of their successful learning communities as told by Tracey, Lisa and Jacki.

Spearheading Success: Tracey's Story

Tracey was a grade 8 teacher in a mid-sized elementary school located in an established middle class community. The school staff was active in their professional development around school improvement initiatives, and was described as committed, professional and risk-taking. The school housed several special programs, such as French, Aboriginal Awareness, Band, Music, and social skills programs, as well as half-time and full-time kindergarten programs. The staff was focusing on data-driven school improvement in reading and math, second language instruction, and staff and student faith development.

At the time of the research, Tracey had four years experience in three different grades, and in two different schools. She also had a previous career in the workforce before earning her education degree. Being relatively newly employed in the school division, Tracey began her career in a primary grade one classroom, where she learned the ropes of teaching reading and early writing, and in her second year, was moved to a grade eight classroom. Having used systematic guided reading in the primary years, Tracey had been highly unsatisfied when she began teaching the grade eight students because of unspecified approaches to guide them in their reading. From this, she developed strategies for guided reading in the middle years, and was quickly offered a half time position as teacher on assignment in the school division, sharing her strategies system-wide. As a half-time classroom teacher and half-time teacher on assignment, Tracey found herself involved in a professional learning community focused on guided reading.

There were two professional learning communities in the school in which Tracey was employed. One professional learning community housed the primary teachers, while the other included the middle years teachers. Each PLC was directed to meet every second week,

alternating with a school-wide staff meeting. Although it had been mandated by the administration of the school that PLCs exist at Tracey's school, the central focus of each PLC was not mandated and could be established by the members of the PLCs.

Tracey was the leader of the learning community in which she was involved, and as such, had the freedom to express her views and encourage others to express theirs as well. She was confident in her skills and was able to share them with the group. The rest of the PLC membership consisted of five other teachers, including the grade five to eight teachers and a member of the administration team (the principal or the vice-principal). Although Tracey was the leader, the PLC operated as a team. The only distinct roles that the leader assumed were typing the agendas based on previous consensus, delivering the minutes from previous meetings, and keeping the team on task at the meetings, based on their goals. Tracey believed that although she was the leader, she did not have an authoritative role over the other members, and each member had a responsibility and a right to be heard.

The Planning and Process

At the group's first meeting, Tracey felt that it was important to share her philosophy of professional learning communities with them. She told them that it may seem as though working in a professional learning community is more work at first, but that it would, in fact, alleviate their workload later on, since they would be working together. Through this philosophy sharing, she also managed to communicate some of the expected norms of the PLC, including when she told them, "it's not for talking about the ski trip or activities that we're going to do outside the school and things like that. It's talking about student learning". The culture of the PLC, then,

evolved from that point. After working together for six months, she described the PLC as follows:

> They are supportive. They are caring. They are trusting…as soon as you say
>
> 'what's not going well' you have to have the trust in the people around you to say
>
> what isn't going well, and we have that because we know that everybody who's
>
> involved has something that's not going well right now.

Tracey felt that those components led the PLC to become not only one of sharing, risk-taking and trust, but one of higher level thinking. She said that discussions led to decision-making, be it higher level thinking, or process thinking, but the step-by-step thinking led to growth through this interaction and sharing.

The process Tracey's PLC undertook to determine their goals for the year was one guided by data analysis and data-driven dialogue. They used a provincial assessment, called the Assessment for Learning (AFL) for data on reading. Tracey recalled that after looking at the data,

> We realized that there was a need to increase comprehension so we talked about
>
> what we (could) do. We talked about the different strategies that there are for
>
> improving reading and one of them was a strategy that I had done a lot of research
>
> on, which was guided reading.

As the year progressed, the group discussed the need to enhance their instruction using guided reading. They talked about strategies, overcoming obstacles to effective instruction, and resources and assessment materials (to level their reading). The discussion also included

understanding the teachers' comfort level with strategies and what they needed to know to develop skills and strategies for success in the classroom.

The process that the PLC followed at the meetings included discussing their long-term goals for the year, such as spelling and computation, followed by a discussion around the group's central focus, which was guided reading. Tracey began every meeting with dialogue by asking the group what was going well and what was not going well. Someone took notes on this. Following the dialogue, the process was that the PLC would discuss what they were going to do about what was not going well. Sometimes this included sharing practices that had succeeded, sometimes it included looking for additional resources online, and sometimes it included making a decision to purchase resources. She said:

> we work together to find resources that will help…because we know that in the
>
> end, it'll help us all…So it's just a process of working together…we just talk
>
> about what works and what doesn't work and why it doesn't work and work
>
> together to try to find something that will work.

The philosophy of the group was that by helping others, they were helping themselves.

There were also other underlying goals to the creation of this PLC. At the outset, the stated goal was to improve student reading through the guided reading process, but Tracey admitted that she hoped the PLC would become a team that would work together and support one another as they strived for student success. She stated that it was important for the members to build on others' ideas so that teacher learning was not isolated. This, Tracey identified, was a way to support all student learning in direct and indirect ways.

Tracey was aware of the effect on the group of asking 'What's going well? What's not going well? What can we do to make it go well?' She added, "We can ask what they're doing and why and it gets them thinking…The whole goal is to find out how we are going to get there." She recognized that once you asked a member why they used a certain strategy; they were forced to reflect on that strategy. Others reflected on what was shared as well as they asked questions about it.

Tracey noted that by posing the questions 'what's going well and what's not going well', each meeting may have seemed repetitive, but she realized that this was the point at which new conversations began. After reflecting on what she had said for a moment during the interview, she realized that the group spent a great deal of time discussing, but little time reviewing or reflecting. Members were left to reflect on their own between meetings; however, she still did not want to undermine the need to discuss collectively what was working and what was not.

Tracey indicated that by putting forward the questions of what was going well and what was not going well, the group had become risk-takers. "They were ready to try something…because without it, they'd be scared to say something isn't working for them". She was unsure of how they got to be risk takers, but attributed it to the culture of the group, and possibly the idea that it was OK to go out there and invest in something, even if mistakes were made. For example, Tracey recalled a conversation that the group had shared regarding using a subjective and objective common assessment. Although there were differing opinions, she felt that the group members grew despite the fact that they did not achieve an overall consensus. She recalled that

We had a conversation on how we use a common assessment, and if we use a

common assessment and there's subjectivity in the comprehension part of it (as in

a rubric)…is it worth it to even assess the comprehension if it's subjective? How

do you pass that on to the next teacher?...So we talked about it and we thought

and we threw out a bunch of ideas.

She continued to explain that the overall agreement was that it was acceptable to use a

common assessment, even if it included subjective components. Those individuals that didn't

agree with the idea spoke out and their points of view were heard, but it was discussed that

subjective assessment was preferred to no assessment at all. The point was not to have everyone

agree, but rather to allow the conversation to come around to those ideas, and ultimately allow

everyone to make their own, better informed choices.

Government Mandate as a Focusing Mechanism

The goals of Tracey's middle years professional learning community were based on the

school-wide learning improvement plan, which was a branch of a provincial accountability

framework called the Continuous Improvement Framework (CIF). The CIF made it mandatory

that school divisions focus on areas of teaching and learning identified as needing improvement,

and report to the government on this improvement. Because of this, each school in her school

division was required to write and report on improvement using a Learning Improvement Plan,

highlighting areas of strength and weakness, and the associated plans to improve.

Tracey and the educators at her school identified Math, Language Arts, Character

Development, and Religion as areas of focus. They created improvement goals based on

objectives within each of those areas. As Tracey worked through the goals with her PLC, she

quickly recognized that the Learning Improvement Plan was a source of authority for her, and it could be used as a tool, as it helped the team stay focused, and it gave her backing for the entire PLC process. The mandate of the group was to identify areas of strength and areas requiring growth, and to plan for improvement in those areas requiring growth. The PLC was seen as the approach that the school was using to identify, plan for and carry out plans for growth in student learning.

Identifying Success

Tracy thought that the group had been successful for several reasons. She said that she felt initially successful because of the conversations early on in the PLC that kept the group focused on the goal. She felt that the PLC was successful as well because the group shared the task of finding solutions. She also identified success through the way that members were open to sharing and learning, as this helped them grow as professionals; and lastly, she identified that the PLC ultimately helped improve student learning.

The Method of Modeling

In describing her experience, Tracey identified early on that she knew the group was successful by the way that they began to share experiences and problems. She said they talked about ideas and experiences, and from that, "they talk about what works and what doesn't and what they've tried before". She thought that this was success. She explained that it was this type of conversation that got things moving for the group in terms of learning new strategies, approaches or understandings. Some members listened and tried new ideas immediately, while others were less prone to begin right away. Regardless, the new ideas were heard.

She described one conversation that followed a discussion on guided reading in the classroom. She explained that the strategies that were shared, and she recalled being "excited about the conversation, and it was engaging conversation. It wasn't just one person talking". She knew that they had not yet put the ideas into practice in the classroom, "but there were good conversations started. There's the seed there". She said that she had a very good feeling because she knew they were accomplishing something even though the members of the group had not adopted the strategies at that point.

Tracy was acutely aware of the process around this success. She knew that investing in discussions such as those created the conversations that led to the desired levels of success. She said, "when you're sharing information and when you're listening to other people share their ideas, that's success". As the leader, Tracey was able to guide questions that created this place for investment. To her, they simply existed in asking 'What's working and what's not working?'

The trust, however, to be able to invest and share in the PLC was not immediately present in the group. It germinated as the group evolved. As they started discussions, Tracey realized that she had to take the initial risks in putting herself out there and admit to the group that she was experiencing problems in some areas of instruction. "I'm OK with saying that I have those problems. I think that modeling is huge. To show that I have roadblocks in my day and these are the problems that I was having…is important". Tracey's own risk-taking was instrumental in establishing this trust. She said that thinking back on it, she knew that if she wanted them to risk what was going well and what was not going well, she had to show them that she was able to do that herself. As she listened to their comments following her sharing, she realized the strength

and power of the PLC. She truly appreciated that she was getting great help and that she was genuinely supported by a cohort of combined years and experience beyond her own.

Sharing the Load to Ease the Burden

Through discussing what worked and what didn't work in each classroom, members not only heard about new strategies or new ways to use existing strategies in the classroom, but members were also able to save time looking for these new ideas. She said that members did not have to read a whole book on behavior management. Rather one person might read it and share, or they might just share what they did in the classroom, strengthening the repertoire of the other members. "It's the sharing of information that gives the people ideas a lot of the time." Tracey recognized, however, that not all members agreed that belonging to a PLC eased the workload, especially initially. At the start, "it adds to our workload. For sure it does", but this quickly evened out through sharing strategies and sharing the job of researching strategies and resources for the classroom. "A quick 'here is it…think about it' saved us a lot of time and it helped us all grow as we did not have to do everything ourselves." The sharing of information not only provided members something to think about, but talking about it helped them open up. Both of these had great potential to influence teacher professionalism.

Creating a Place of Learning

Tracy recognized that all of the members approached the table with different opinions. Rather than considering this to be a negative quality, however, she thought that it represented a wonderful facet of the PLC. The discussions that they worked through brought alternate views to the table and were enough to create conditions that made the difference they were looking for.

She was pleased that the group didn't always agree; and observed, "We just need to talk about it and get good thoughts going on about it". She said that they needed to have the disagreements because they cause the conversations, and the conversations cause improvements in teaching and in learning.

She indicated that at the point at which everything was all out on the table (the strategies, the processes and the results) the team realized a concrete success through improved student learning. "Here is the black and white…our strategy is working!" At this point in the process of the PLC, the group could celebrate their success and know that along with their own personal growth, they did well for the students.

Identifying the Ingredients of Success

Tracey reflected on the processes and products of the PLC, and how they arrived at the different levels of success. She discerned what were, in her opinion, the most important elements of success. She confidently described that having a common goal and having conversations around that goal were integral to the success. The conversations were not always directed, but they were centered on what was working and what was not. She said that

It's important to have those conversations, and to have a common goal. But I
think how you get there is a journey and it's learning for everybody. If everyone
disagrees all the time, or doesn't have the same ideas…there are good
conversations going on. You can disagree and you can have different
opinions…but you also need to be open to other people's opinions and you need
to think about the goal.

In Tracey's opinion, those conversations would not have happened had there not been a PLC. She said that teachers may talk to one another about problems or situations, but because the common goal and the designated time to talk would be lost, the lack of consistency would reduce the certainty that the conversations would exist.

Tracey identified that conflict among the group didn't define its success or lack of success. Rather, the conflict was necessary as it caused the conversation. "It makes you think about what you are doing in the classroom and what strategies you are using and how you are using the strategies". Having to describe why certain things worked and why others didn't work and made the members talk about it and pull together to find solutions.

Connecting the Dots: Tracking the Catalysts

Tracey could track the catalysts for each stage of success. She said that the catalyst for the end product of success was student learning. The catalyst for student learning was the experiential success of finding what would work to cause this learning. The catalyst for finding what would work was the collaborative success through the conversations, and the catalyst for the conversations was setting the goals; therefore, setting the goals was the basis for success. The biggest success piece for her was the goal and the conversations around that goal. "If you don't have a goal and you don't talk about how you're going to get there and you don't share your ideas, then you're not going to be able to achieve the goal. So I guess it's the conversation. Working together."

Tracey emphasized that there were "conversations around strategy and conversations around behavior, and conversations around how we know our students are doing well in numeracy in math." She said that these are what build the success. In terms of individuals being

responsible for the success, Tracey replied, "personally do I feel successful? I feel the conversation is successful." She does not attribute success to an individual or to a leader of a group; rather it is the conversations themselves that were integral to the outcomes. But it is more than just having conversations in the group. Rather, the topic of the conversations is key, through its focus and purpose.

Conversation over Consensus

Tracey explained that the nature of the conversations was key to a meaningful conversation. "It doesn't help to talk about the teacher or how the dance is going or what kind of candies we should sell at the dance. That doesn't help anybody and those are things that can be discussed in the staffroom or in the hallway." The conversations during PLC time had to be focused on the goal, despite pressures in the school year that are unrelated to the goal. She said that the conversations that happened through the PLC needed be those that influenced student learning and that made the teachers' jobs easier.

Of course, conversations were not always centered on strategies in teaching reading, since teaching is such a complicated venture. The group realized that sometimes the conversations had to be about student behavior, which is not a long-term goal, but left unaddressed, prevented the long-term goals from being attained. "At times, we have to deal with the problems that are going on right now in their classrooms…(because) the teacher is unable to focus on a long-term goal until they have the support with what they need right now and that makes sense". These conversations needed to happen so that the teachers could get past the issues and focus on student learning.

Conversations did not always lead to consensus as well, nor should they have. Sometimes the lack of consensus led members to thinking and analyzing. Tracey recalled a conversation around assessment using rubrics. Some members of the team felt that it was difficult to use rubrics, as they were quite subjective. They preferred clear-cut, objective checklists to the rubrics. "We had some conversation, and the majority of people thought it was beneficial for a teacher to assess student comprehension and be subjective about it…so we talked about it and we threw out a bunch of ideas". Although everyone did not agree, the majority thought that the idea of using the rubrics was a good one, so they decided to do it as a team.

Tracey understood that immediate consensus through collaborative conversation was unlikely. She knew that if her thoughts differed from others in the PLC or if she thought something wouldn't work, she needed time to go back and think about it. Perhaps starting a meeting by asking members to revisit previous issues would help members express themselves and their thoughts.

After analyzing her thoughts, Tracey added that the purpose of the discussion was not to have everyone think the same way, but to allow for a process to occur. "I think the conversation has to come around those ideas and I think that ultimately (people) will make their own choices. You can't make them believe something." Once the process took place and members had a collection of opinions and worked through their ideas, the choices they made were better informed than without the conversations.

What to Do with Johnny

The PLC had great influence on Tracey as a professional. "If someone has a strategy, for example, and you don't think it's going to work in your classroom, it helps you to think about all

the roadblocks and questions in between." She felt equipped and has broadened her ability to listen to others and understand where they're coming from. "The understanding helps."

Tracey recalled that when she first started teaching, she had great difficulty working in cooperative groups sometimes. She did not feel that it was acceptable to voice that concern to anyone, nor did she have the courage to do it. However, as Tracey matured in her teaching, she also matured in her ability to reflect on her performance and behaviors, and she realized that she had to, for her own benefit, analyze why she felt this discomfort. Upon reflection, she shared a video that she had watched earlier in her career. It was about a teacher who, during a recess break, commented that she had had difficulty with a particular student that day. She said that she didn't know what to do with Johnny in her classroom that day. At that point, another teacher added that she had never had any problems with Johnny the prior year. The conversation then came to a halt because the teacher no longer felt comfortable expressing herself to others. After that, she would just say that she did not have any issues with that child. Tracey realized that this story changed the way she listens and offers help to others. "I think it's understanding that you have to think back in time to when that's happened to you…so that we don't do something like that to stop the conversation." It's about always looking at someone else's perspective before adding your own.

The Effects of Sacred Time

The PLC had a positive effect within the school. Tracey noticed that along with improved student learning, teacher relationships had improved. Many teachers no longer worked in isolation. Rather, they were friends, and they cared about each other. They had good collaborative working relationships. She was also aware that trust was tied into this. "The trust

is huge. We get to know that we're all humans and we all make mistakes and we're all willing to help each other, and when we come to work, we're all working together toward common goals".

The PLC also had positive effects on Tracey. She was aware that as a teacher, her days were very busy and so many events happened during a day that she hardly had time to reflect on them. Meeting with her group, however, created an opportunity for this reflection using the following:

> What works for you and what doesn't and if it doesn't work for you, what are you
>
> doing that's not working? And have you ever thought of doing it this way
>
> because I've always done it this way. Why have you always done it this way?

She commented that reflection also occurred when she distributed the agendas and minutes. Everyone got a copy of what would be or what was discussed and they could reflect on it. Tracey was unsure that these types of conversations and opportunity for reflection would have occurred if the PLC did not exist. She said that they might have happened in the staff room, but that the PLC was "sacred time". Uninterrupted time. It was safe to sit and talk and reflect, and without it, "that kind of thinking wouldn't go on".

Tracey was also humble in taking credit for her role as a leader in the PLC. She claimed that any leader of a PLC had to be gung ho and excited about learning. The group needed to feel successful and to know the results at the end. In terms of her role as a leader, she said, "I love my job, and for me to get excited about things isn't hard. And it's not false. I'm genuine about the excitement and I think that's important too and what happens is that it rubs off and we get a gung ho group and it's a lot of fun".

In terms of the next year, Tracey didn't think that the PLC would necessarily adopt the same norms and behaviors as it had that previous year. Although they would think about what was successful and what was not successful, any new members would need to become a part of it. They would have to be in on the conversations around the norms, and their ideas and input would need to be considered and included. "I think it needs to be new every year as a new team starting a new conversation." She said it was like a lesson plan. There had to be a review and then start anew.

I Want Them to Do it Too: Tracey's Thinking

During the first interview, Tracey's responses centered on the need for meaningful dialogue, and how she would set the stage for this meaningful dialogue through posing key questions. During her second interview, the metacognitive interview, she elaborated on her thinking behind planting the seed for meaningful dialogue, her thoughts on success, and her thinking about giving every member voice, arriving (or not arriving) at a consensus, modeling for success, and understanding her own fears and her own thinking. She saw herself at the centre of the activity, placing the responsibility of modeling and mentoring on her own shoulders. Her understanding of the processes of the PLC influenced the ways in which she led the group.

Planting the Seed

Tracey described discussion as the root of the activity. Exploring her thoughts on this discussion, she always asked the group what was working, what was not working, and why it was not working as the catalysts to meaningful discussion. She said:

I thought that the purpose of saying what was not working was so that people would share what was working for them. Or if they were not doing what was working in their classroom they could at least share ways that they could have gone about making it successful.

This process had a dual purpose for her. It would get people talking, but it would also get them thinking. Describing the thoughts in her head during those conversations, she said that as people shared:

I thought 'okay, that's a good idea.' 'Where did you get that?' 'Is that a web site that you use?' 'And how did you get it?'…But if it was something that was not working, I guess what I was thinking was 'how did I make it work for me?' 'What can I share that I know?' 'What are some ways that we can find time to work together maybe at our next PLC meeting to find an opportunity to help them out?'

Tracey was able to transpose their ideas into her own situations, and cognitively assess whether or not such strategies would be feasible for her and her group. This was a sign of success for her. She also knew how to get the group to that point where sharing and thinking were palpable:

Q: When you said, "I think that was successful, because we got the ball rolling", What were you thinking at that point, when the ball started to roll?

A: I guess the discussion. The discussion started happening in terms of what we already knew what we didn't know and wanted to know more about and what we were already doing in the classrooms, so I guess that would be how we got the ball rolling.

Q: And you thought that was successful…that teachers would just feel comfortable to talk about what they were doing?

A: Yes, what they were doing and that they were going to learn more about what was out there.

Q: So you think that was happening because the discussion started?

A: Yes, I think so. The minute we talked about something, and there were ideas coming out, then I thought members of the PLC could add, and talk about what worked what didn't work or what they'd tried before. For example, if someone had a strategy that wasn't working or was frustrated with it then they could talk about that strategy and they could say "it worked here because I do this…" I thought it was just the conversation that got the ball rolling.

Q: When you felt success when the conversation started, did you feel that success right then?

A: I felt good, because I felt like we were accomplishing something. Had they put it into practice or had I put their ideas into practice yet? No; but there were good conversations started. There was the seed there. And it was up to them whether or not they were going to allow the seed to grow. But true success was if the seed actually grew.

Q: So you felt the success then?

A: Yes, because I was excited about conversation, and it was engaging conversation. It was not just one person talking. It was the conversation.

Q: I want to know more about that. I want to know when you felt that

excitement. At what point did you feel it and what was it that you were feeling?

A: When someone jumped in and was excited about something it got someone

else excited. I think that's what happened. Maybe not all of the time, but the

majority of the time when someone joined a conversation and said "I have an

answer for that or I've tried this in my classroom and I have an answer for this" or

if someone said "you know I'm really not having luck with this strategy or luck

with someone's behavior or a good experience or whatever it might be…It was

more information sharing, and I got excited when people said (that they) never

thought about that before, or never tried that before.

Success, from Tracey's point of view, meant getting members discussing, and through

this discussion, getting them to think about what was working and what was not working

for them. She knew that she could not control what happened with the thoughts after that

point, but also knew that there was value in getting that ball rolling.

It Works! It Matters!

Tracey's responses during the metacognitive interview were drawn toward the

concept of success. Honing in on this, she explored the concept through recalling the

critical time that the members themselves realized they were successful:

Q: You expressed that "we realized we reached success when there had been

growth". It wasn't just *you* thinking there was success when the ball got rolling

with the discussion, but the group itself realized that from one test to the other,

there had been growth. What were you thinking when the group was realizing

this?

A: We went through the process of talking about the benefits and the drawbacks

in the strategies and in the talk, and the different ways to use the strategies in the

classroom. We talked about all those kinds of things. We had people with

different opinions, which was wonderful. We put it all out on the table and we

talked about it. And that was the part where I was thinking "hey that whole

journey that we did before really worked because our students have improved.

Here is the black-and-white. So subjectivity or no subjectivity in the

comprehension, our strategy is working. So, yay! We did good! We succeeded!"

In specifically describing what she was feeling, Tracey added: "I felt like running up-and-down

the hallways going YAAAAY! Honestly. It was good. It was *look at what we're doing*! *It*

works! It matters! It counts!" Tracey could feel the success. Describing her thoughts on what

others might be feeling, she added: "It increased the opportunity to feel like a team. We felt like

family."

Tracey was aware of the value of presenting the important questions of "what's going

well, what's not going well, and why is it not going well". Her convictions on their importance

did not waver as the year progressed:

Q: What did you think when it first started happening – that people were starting

to share *what's not going well*. What were you thinking, emotionally or in your

head at that point?

A: I guess I was relieved that people felt comfortable to share.

Q: And do you still feel that now, when someone starts to say what's not going

well? Does it strike you as much?

A: Did it strike me as much as it did the first few times? Was it repetitive? I

guess in a way. But there was always new conversation coming out of it. It was

repetitive in the way he that we were saying what was going well and what was

not going well, but the only thing that I'd like to think about changing, was that

sometimes our conversations of "what's going well and what's not going well"

could take up that reflection time.

She was pondering the idea that discussion often took up time that the members could be using

for reflection, but knew that both the discussion and reflection were valuable. Tracey's

responses throughout the interview focused on the need to invest in the PLC in order for it to be

successful. She thought:

Investing, I think was huge. If we were not willing to … well there were

conversations when someone would be invested in and some when they wouldn't

be. Some days were better than others. I don't think there was 100% investment

all of the time. That's just the way it goes. But I think that when we were sharing

information, and when we were listening to other people share their ideas that was

success.

Tracey also believed in the purpose of conflict. She said that it can be the catalyst for

valuable discussion:

Q: If you had to put a PLC that had very little conflict, and everyone was on

board and they seemed to always agree on all the initiatives versus one that had

more disparate views on a continuum of success, which one would be more
successful?

A: That depends. It depends on the people that were in it. We needed to have
disagreements because it caused the conversation. And it made you think about
what you were doing in the classroom and what strategies you were using and
how you were teaching the strategies. It made you think about how the students
learned and were they learning from the strategies? It would be unrealistic to
think that there would be everyone always agreeing or doing the same thing all
the time…We needed to think about the goal. The conversation always needed to
come back around the goal. Asking, "Is it benefiting students? Are students
learning?"

Tracey thought that the nature of the conversation and its purpose were central to achieving
goals. Bringing the group closer together, the discussions engaged the members. Through
working through conflict, sharing ideas and developing their reflection skills, the group
progressively became invested in the process, and this investment fed the conversation, which
again fed the sharing and the investment, in a sort of cycle of improvement.

Mental Conduits

Tracey showed evidence of being a metacognitive teacher. Initially, her answers
remained on an objective teaching and learning plane, such as when she reflected on the catalysts
of learning and success. I asked her: "What did you think, then, was the success factor or the
catalyst for feeling this success…as a team? What caused it?" She responded "Student
learning". I asked what caused the student learning, she said, "Our journey towards finding

something that would work to cause student learning, and what caused that was the goals that we had said at the beginning." She was also sure about what was going through her mind as the conversations took place among the group:

Q: Did you have a mental conversation in your head as the other person was talking about success?

A: Absolutely. If someone was describing a strategy that worked, I was thinking "OK, what is this person doing that the strategy doesn't work". Or thinking, "how can I do something to help this person" or "what is this person doing that they can change that might make it more successful". Or I might have been thinking "OK, that doesn't work in my classroom". On the opposite spectrum, if someone was talking about something successful that maybe wasn't so successful in my classroom, that time my thinking was vice versa; "I should use that, but it doesn't work in my class because of this…"

Q: In thinking about your thinking, you expressed sometimes you were thinking "what's this person's roadblock" or "I don't want do that", have you noticed that there are any strategies to your own thinking? When you sat down at the PLC meetings do you know, for example, that you had to listen a certain way or think about things a certain way?

A: I thought I had to treat people the way I wanted to be treated. If I had an idea or something was not working, I wanted someone to listen to me and respond to me the same way that I would respond to them. Vice versa…I thought it was important to just listen to people. I thought it was important to try to understand

where they were coming from. I thought it was important to understand the

scenario that they were in.

Tracey articulated that as others were talking during tense moments in the discussions, she

cognitively supplanted their emotions as her own. She took a responsibility for their feelings and

reactions and ensured that exchanges went on in a manner that would keep the discussion and

investment alive. She thought about how it was necessary to treat others the way she wanted to

be treated. She wanted the conversations to run openly with everyone feeling welcome to share

their situations, without fear of ridicule or retribution.

So if someone disagrees, I would never tell that person that they're wrong because

no one would want to be told they're wrong and I think that that's important. You

have to be respectful when you listen, because you want to be respected when you

have an idea.

As she listened, she thought about their good ideas, wondered how they got there, asked

questions, and enjoyed the discussion. If it was something that wasn't working for them, she

searched her mind for ways that she could help them. Sometimes she mentioned ideas then, and

sometimes she planned discussions for the next PLC meeting to help them out.

Tracey gave the impression of being a deep, analytical thinker. She found herself not

only thinking about her own thoughts, but thinking about and imagining others' thoughts,

especially during conversations in which people did not agree, or were not willing to take part in

new ideas. She referred to the discussion when the group disagreed on using the subjective

rubric as a tool for assessing writing. When this happened, Tracy found herself thinking "what's

the roadblock? Is the roadblock really the fact that there is subjectivity in the assessment or in

the rubric or is it something else?" She then extended her thinking to a double loop, analyzing whether or not she was right in her thinking. The reflection, in this case, reaffirmed her original thinking, as she felt that the assessment was still necessary despite its subjectivity. She then found herself to be concerned about the other members' line of thinking, and extended her thoughts to theirs. She wondered why the concept of subjective assessment bothered them, and supposed that maybe they figured it wouldn't benefit the students, or perhaps they wondered how they would use such information in the classroom. She also thought it could be that they had used the strategies before and they had not worked, or that they needed solutions that were more objective and less subjective.

In looking at how Tracey managed her thoughts, I asked, "Did you have to tell yourself 'I'm going to handle this a certain way'?…At this level, when you were working with them, did you have to treat your thinking a certain way in order to maximize the benefits?" Tracey gave the impression of applying a type of mental filter to the discussion. She grounded the contributions of others in her own experience, and was able to mentally consider the scenarios as they would apply in her own world while the discussion was taking place.

> A: I thought about "how would that look in my classroom" or roadblocks to how
>
> would that look like in my classroom? How when Johnny react to that? What are
>
> the possible roadblocks that everyone is thinking about right now? What are
>
> some things that are stopping this from happening? I think about things that I've
>
> thought about before. Where are we going to get the money? How are we going
>
> to achieve this? It really depended on the conversation was going on. If someone
>
> was talking about a strategy and how it looked in their classroom, I immediately

started thinking about how it would work in my classroom. How would it look

for special-needs students? What I would do if I had more students in the

classroom than I did?

Q: What happened to that knowledge or those thoughts after you'd leave the

meeting? Say someone talked about something, and you were walking away with

the meeting in your head. What was going on?

A: Well, hopefully I would have had time to talk about those during the meeting

and if not, I needed to bring it back.

Tracey's metacognitive ability allowed her to deeply reflect on discussions and on the

thoughts in her head. This had an impact in the way that she led the PLC meetings both

as they went along, and in subsequent meetings. She presented the information and

discussion so that others had the opportunity to consider the contributions as well, and

guided the discussions in ways that kept members engaged and invested.

Giving Voice

The norms of the professional learning community gave Tracy the freedom to voice her

thoughts, ideas or concerns. "It's part of our talk…I think the purpose of saying what's not

working is so that people will share what's working for them". She knew that it was important

that everyone had a voice and that everyone could think or have time to think about the goal that

they were trying to achieve and how they were going to get there.

At one point in the interview, Tracey shared an anecdote from earlier in her career, from

which she learned the importance of allowing herself voice to understand her own behaviors.

She described how she dealt with her own fears regarding cooperative learning:

When I first started teaching I was very uncomfortable with them (cooperative learning situations), so I thought it was important that everybody was able to see themselves as "I'm not be comfortable with this". And ask themselves: "what it looks like; what might I not comfortable with; how I might not be comfortable with giving up control of my classroom?" I think it's important to lay it out and say "it's OK to say what's on your mind". Because we were all thinking it. I think sometimes we just didn't say it… So I guess this was what this is all about. It was about conversation, and about feeling OK with things. People came to a different understanding because they had the opportunity to talk about it.

I asked about that metacognition. "You were saying, when you mentioned about the cooperative learning, "Why don't I like cooperative learning; I need to figure this out". Was that the conversation that would've made you figure that out? What were you thinking?"

A: Well, there is so much going on up here in my head.

Q: Were you always this type of thinker? Always metacognitive? Reflective?

A: Always. If something's going wrong, I need to know how to fix it. In order to fix it, I need to know what the problem is. In order to understand what the problem is, I need to think about the situation. And when I get to a question to where I don't know the answer that's where I need my PLC. Because I need to voice what's not going on, and I need an answer to this.

Q: Do you think most people are like that? That they reflect on what is wrong?

A: Well, it depends if there and survival mode or not.

Q: Well do think that it's just you or do think that it's everyone?

A: I hope that it's everyone. I hope they tell us what's working and what's not working. This experience influenced the way that she led the group. She was aware of how her mind worked when she encountered something cognitively uncomfortable, so she applied this to the process of her PLC. This thought was the basis the discussion that started every meeting with *what's working, what's not working, why is it not working?* Tracey used her mind's own analytical patterns in an attempt to get others to analyze their thoughts.

Through this process, Tracey referred again to the resisters in the group. They were reluctant to take on the goals and become involved in the conversations. Prompting her thoughts on that, I asked her, "What were you thinking when they chose not to get involved? What were you thinking at that point?" She empathized, "What was the roadblock? Was the roadblock really the fact that there was subjectivity in the assessment or in the rubric or was it something else?" I asked her for further views, "What else could it have been?" She had several thoughts to share on why they might resist. She answered as if from the resister's perspective with:

> It was extra work; it added to our workload. For sure it did. The roadblock could
>
> have been…"I don't know how this is going to benefit our students". It could
>
> have been "how are we going to use this information". It could have been "I've
>
> done this before and it didn't work". It could have been "I need more black and
>
> white answers; I don't like the grey".

Following that answer, she continued thinking on the spot and added thoughts that she did not have prior to the interview experience. She cultivated these thoughts:

> It was more that they didn't have a chance maybe, or have an opportunity to think
>
> about why they didn't agree with something or why they thought something

didn't work. And they hadn't really been able to step back and think about their

reasoning. They just knew that they didn't think it was going to work.

Sometimes I thought on the spot because in the PLC, I didn't have the

opportunity. So maybe revisiting something like that might have been beneficial.

And I never thought about that. So, writing down where there were some

questions about the validity of testing and the subjectivity in testing for

comprehension, and then maybe revisiting that the next PLC. Asking "what are

we thinking about that now?" Or, "We had that conversation before, but now

everyone's had a chance to think about why it's important."

Tracey's level of metacognition was not only evident through the collection of answers that she

provided through her recall, but also in the way that she reflected on her answers on the spot,

coming up with additional reflections and analyzing her thinking. She added thoughts and ideas

that became apparent to her as the interview pressed on, and was aware that she was doing this.

Thoughts on Consensus

Understanding that there would be resisters, Tracey was aware that full consensus was

most likely not possible during some discussions and problem solving. I asked her about her

thoughts on a lack of consensus: "At that time when there was not full consensus, how did you

feel? Did you feel that everyone had to have consensus?"

A: Now, I'm speaking on my own behalf. If I didn't feel the same way as

someone else, or I didn't think that something was going to work, I needed time to

go back and think about it before...so I didn't think that anything had to be a

consensus right away. I think we just needed to talk about it and get good

thoughts going on about it.

Q: When others didn't agree, what happened with your thinking? Did it influence

what you thought about assessment and subjective assessment? Or were you

pretty firm in your thoughts about subjective assessment?

A: I knew that there was subjectivity, but I also knew that from using the

assessment, in my personal opinion, it helped me. It helped me in my teaching, it

helped me plan the lessons, it helped me plan the units, it helped me teach the

individual student, it helped me through the conferences to be able to tell parents

and talk to parents about their understanding and comprehension. So it gave me

that data that I needed to be able to plan and to be able to communicate with

parents and kids. So that's where I found it successful. I could see the point

where there was subjectivity to it but I thought that the benefits outweighed the

drawbacks.

She added her thoughts on resistance and the importance of the process of the conversation:

It was not to make everyone believe what someone was thinking. I thought that

everyone had a right to their own opinion and their own beliefs…You could give

somebody all of the ideas, and you could talk about the benefits and you could

talk about the drawbacks; but it was hard sometimes. I thought, not everyone's

going to believe or use every strategy that we talked about, because they were

making their own professional decisions. So, they might have taken a little bit

like when you go to a workshop, you take a little bit here, a little bit there. You

don't use everything. If we could help each other make our lives easier in any way I thought that was success…Sometimes how we were going to get to our goal may have differed just a little bit, but as long as we were having a discussion about whether it worked or not, that was the key part.

Knowing that consensus didn't have to happen right away afforded Tracey the time to reflect on the meeting and make plans to further discuss the topics. She also believed that it made others do that as well. She knew that she could not get all individuals to think a certain way, and did not attempt to. She realized that consensus was not the goal, rather, the process was the goal; and through that process, have teachers think about what was happening in their classrooms in terms of what was working and what wasn't, so they could find something that did work.

It Helped me to Think

Although a professional learning community is often identified as one that would influence student learning, Tracey shared that the professional learning community had influenced her thoughts as a professional. She emphasized that there was great benefit to the process of the PLC, and it advanced her own thinking as a professional. She said:

It helped me to think, and it helped me to think about the questions that people wonder. If someone had a strategy, for example, and I didn't think it was going to work in the classroom, it helped me to think about all the roadblocks and the questions in between. "Is this going to help student learning?" "Will it be effective in my classroom?" "What will work in the classroom of my size?" "What can I do to make adaptations or modifications for special-needs or for

regular students?" All those kinds of things were all questions that came off in a

PLC, because everyone was thinking about them all at different times. It helped

me think; it helped me come up with questions that I was going to ask; and

question the whole journey.

During the discussions, Tracey had the time and opportunity to think about her own situations

and consider solutions that others were offering as potential alternatives. She had thoughts that

everyone else was thinking what she was thinking, so as a collective, they would be able to work

together to solve problems. She also took this thought further and started to question and

consider the PLC journey itself as it affected her in her teaching, and other members' teaching as

well.

Thoughts on Modeling

Tracey established a risk-taking culture when she chose to extend herself and model

inquisitive and collaborative behavior. I asked her about her thinking behind this, "When you

put yourself out there the first time, and you said to them "what do I do - we have this guided

reading and I don't know what to do at the end when the kids are done?" What were you feeling

or thinking the first time that you put yourself out like that?" To this, she answered, "I wanted

them to do this, so I had better do it too". Tracey again displayed an onus or a responsibility

over the group, being open to them so that they were better able to take a risk and share what was

happening in their classrooms.

I continued to ask, "As you were progressing through your problem, were you still

reflecting on that?" She revealed her thoughts on that when she said,

I was thinking there were five other people thinking about this at the same time, that have had maybe more success with this than I have and there were teachers there that had been teaching more years than I had. And I guess I was excited that I was getting help. I was supported.

There was a double-benefit to risk taking and modeling for Tracey. The first was that it created the environment for others to do it too, and the second is that Tracey received valuable input from the collective, multiple times larger than what she could conjure up by herself as potential solutions to problems in her classroom. Tracey could see the value in this collective cognition. She believed that modeling for the group would encourage them to discuss their situations in the classroom, but at the same time, realized that through the modeling, she had to opportunity to receive more help in one shot through everyone's opinions than she could timely achieve on her own.

Summary

Tracey thought about the PLC experience during its development, and after. She realized the cognitive changes within her, and was also metacognitive through many stages of this experience. Her thinking not only reflected professional thought during the PLC, but included reflection during the interview, about the elements of her successful PLC experience.

Tracey's thinking could be characterized as reflectively metacognitive. She put effort into thinking about why she felt a certain way, or why she behaved in the ways that she did. She had a desire to understand herself and recognize patterns in her thinking and

behavior. She then transposed some of this learning in an attempt to understand the thinking and behaviors of others, as they contributed to the PLC experience.

Leading from the Ground Up: Lisa's Story

Lisa worked as a teacher librarian in a small elementary school in a diverse neighborhood. The school was challenged with changing dynamics in the neighborhood, but offered many programs and services to its public, such as extra-curricular programming, band, music, choir, and social skills programming. The staff was described as being exceptional in its care of special needs students, and as having strong staff faith formation. They focused on yearly learning improvement plans, and sought to increase the understanding of their anti-bullying policy among students, staff, and parents.

Lisa was part of a middle years professional learning community that identified a need to improve student writing. She had twenty-seven years experience working at various grade levels, both in elementary and high school throughout the province. Lisa was not the assigned leader of her PLC, but as the learning assistance teacher at her school, she assumed that role. She had experience working with a lot of different grades and was looked up to as a person with ideas and resources.

Professional learning communities were new at Lisa's school, in the second year of operation. The PLC to which Lisa belonged in the first year had achieved limited success. It was driven by the *Math Makes Sense* initiative that was being undertaken throughout the division at the primary grades level. Although Lisa's PLC was for the middle years, they followed the primary mandate as well. They found, however, that although "it was driven by the math performances, it was geared more toward younger kids. And we just couldn't find it making

sense for us. We just sort of floundered all year". This floundering resulted in limited success and a high level of frustration among the PLC members.

In the second year, however, the goals of the PLC had not been mandated; therefore the group was free to choose the area of focus for their goal. Through this process, Lisa was able to influence the group toward working on writing, specifically through the *All the Write Traits* program.

Lisa emerged as an informal leader of her PLC at her school. She had a strong desire to see the PLC succeed in its second year, and although she was not assigned as the leader of the PLC, she found that her knowledge and her ability to find a program to lead the group to success caused her to emerge as a leader of the PLC.

The Planning and Process

Lisa's group decided that they would work on writing. She knew from her experience that they needed an approach that would lend itself to success. They learned from the previous year that moving as a PLC without a concrete plan would not be enough. She realized that they needed a tool or a program to get started. "We needed to have something that was there so that we were not spending a lot of time developing materials, and we knew that this was a tool". From this, they previewed the All the Write Traits for each grade level and chose to purchase kits for all grade levels in their group.

As Lisa reflected on her thinking at that time, she recalled that she was optimistic and excited about the materials. She said that because she had used the kits before, "I knew it was doable, and I had seen it work with my own class. And I thought: knowing my own colleagues, we didn't want to reinvent the wheel and pull things from all over the place". From this

knowledge, Lisa knew that they could easily make a SMART goal for it, as it had a time frame with a beginning and an end.

> When we started talking about it when we met at the beginning of the year people went away from the first big meeting with everything in place. The tool in their hands. The SMART goal was in their hand. We had a good idea of were going. We had to fine-tune it, but people actually got up from their chairs and said, "well this is useful because I came away with something that I can use".

The layout of the program helped them see their goals clearly, and since the kits included assessments, "It was tangible and we could use it". The readiness of the program seemed to give Lisa's team the direction that they were looking for.

Lisa reflected on the fact that the program was so desirable for the team, and she stated that it was due to the PLC's failure the prior year. "(Last year) was just so open, and it was later in the year and it did not meet the needs of what were trying to do with the kids." She said that because the group had identified a common need, and a goal, finding the program was perfect for the team. "People were more focused right from the start, because we had all identified the same need, and we started at the same point, and we all worked through it". Members walked away from the meeting feeling happy – like they had accomplished something.

The PLC took a solid, focused approach. They met and brainstormed the things that they could do to improve students' writing. "We were fairly proactive". They enlisted a language arts consultant to train the team on the new resource, and because the resource was already purchased, things quickly fell into place. After a half-day of planning, the teachers left the meeting thinking "Wow! This is the best thing! We actually know where we're going!" The

process began in the classrooms during the first couple days of school. Lisa said that the group was focused because the goal was focused.

Lisa's PLC met every two weeks, as required at the school. All members of the PLC acted as equal team players. They alternated the roles of leading the meetings and keeping minutes, and reporting to the others. These meetings alternated with regular staff meetings. Lisa admitted to having an integral role to play in this as she felt that the program would help the team succeed, and that this was important following the difficulties that they experienced the prior year. She said,

> I have to say I did a little bit of pushing on it, because I actually used the Write
>
> Traits program the system had. I thought it was fairly valid, and I knew the
>
> people I was working with and I knew we needed a resource that was teacher-
>
> friendly.

Her knowledge of the team, its experiences and the needs of the students in the school led her to know that such a program was required. This knowledge also kept her motivated and energized to push the initiative, as she saw its potential.

Although the team culture was one that was fairly passive, the narrow focus kept them on track. The part that Lisa was less pleased with was that one male and one female in the group tended to take on the leadership roles, and she felt that this leadership should have been shared more evenly among the entire team.

> We've had a couple of incidences where our take-away (assignment) from that
>
> meeting was to go and find some examples of rubrics using a six point

rubric…but the next meeting came around and only one person had found rubrics.

The question was "Where do we go from here?" so it was a bit frustrating.

She elaborated that limited discussion evolved from that point, since there were no samples from which to choose.

The PLC then met regularly to monitor what was happening and to share strategies and progress. "There's a lot of reporting what's going on, where do we need to modify, and how we are going to handle this next time". The group also had to decide on how to measure the student learning outcomes. They decided to use the rubrics in the package with both students and teachers, and accepted that this type of subjective tool would have to be acceptable since objective assessment data would not be possible for this type of goal. To provide measurable data to assess their SMART goal, they gave each student with a writing prompt and guidelines at the outset of the unit, and the teachers scored it. After the unit was taught, the teachers then returned the writing assignments to the students, and the students were asked to edit their work based on what they learned in the lessons. The goal was to determine how much the students learned.

From this experience, they modified their plan, as they realized that some lessons needed to be taught before others. They also added supplementary material.

Structure for Commitment

Lisa felt that she was pushing boundaries with her role in the PLC, but that her role and the PLC mandate itself gave her license to forge ahead. She was putting herself out there and not only volunteering to help staff out in their classrooms, but insisting. She found that the traditional attitudes of the teachers in her building prevented immediate full cooperation. Lisa

thought that the resistance was a result of the teachers feeling as though they were being assessed. She added, however, that

> I think that as teacher librarian, part of my job is to make myself accessible to
> other classrooms and be there. And it's been a struggle, sometimes, getting into
> some of the classrooms because people don't want to work with you. So we've
> kind of pushed our way into the door to work with them. They always see us as
> coming in and making more work for them in their program, and there's been a
> little bit of resistance to that…we're trying to break down a few of those barriers.

Knowing that there would be another PLC the following year demanded that they work together. Lisa was already looking ahead to the next year. She said that they had a lot more work to do in terms of this new language arts curriculum, and she thought that they would focus on guided reading or reading of some sort the next year, so that was going to force them into getting into that curriculum again and looking at the scope and sequence.

Having been through the process, Lisa reflected on her own thoughts around the PLCs. She said that if the PLCs were not required, she didn't think the teachers would thirst for them; but as for herself, she would continue to act the way she always has - looking for people to work with so that she can realize goals.

The Place of Progress

Lisa felt various degrees of success through working as a PLC. She identified that having a common goal and working together to achieve it was a benefit in her school. She also identified that a greater understanding of how to integrate the Write Traits program and the curriculum developed in the teachers, and this was further expanded through discussions and

collaborative experiences. Along with these, she identified an increase in student learning and performance, and attributed that to the group's consistent efforts all the way through.

SMART and Tight

Reflecting on the processes and products of this PLC, Lisa identified that "it was successful, because the group had a common goal, and we all worked towards it and people felt happy about the tool that we were using and how we went about it". She realized the problem with the year before was that they were always changing their goal, and the tools didn't fit the goal. "We were all at different places…We just got frustrated". She was frustrated that the group couldn't get something that was tight and specific. The next year, however, they chose an area and a program that lent itself to a tight SMART goal, thus creating a larger opportunity for success.

Reflecting on this statement and the success of the year, Lisa noted that "once we found that SMART goal, it was like we found a little germ that we could work with and everything else seemed to fall into place". They developed a knowledge around setting up a better SMART goal, therefore were in a better position to succeed again in the second year, and in following years.

Examination of Practice

Through working as a PLC, Lisa's group derived a few valuable lessons. There were strategies and activities that they always had their students do, that once closely examined, no longer made sense. For example, traditionally, their students would write pages for a writing assignment, and teachers would agonize over having to mark it, but "we recognized there's no

point of having a child write a page and a half of material if they can't write a good paragraph". So she pushed hard to have students develop strong paragraph writing skills, and this strategy was successful in all of the classrooms.

She also found that when they met as a team, they had a lot more meaningful things to talk about because they had all talked about the strategies and were trying them out. "We were actually talking", recalled Lisa. An example of this was when one class employed a strategy where students traded papers for editing. The students would take their work and share it with another, and edit each other's conventions. Some members of the group said that it was a good idea, and expanded on it. Other members thought it wouldn't work with their group, so they postponed its use. Lisa said that "you could already see the wheels turning". She realized that as a group, they ended up spending a lot more time communicating with one another about curriculum and what they needed to do for kids, which was good. She realized that members were thinking about the strategies, and whether or not they were put into use right away or not, there was cognitive change, and she was excited by that.

Professionally, Lisa thought that they made another substantial gain. Although the first PLC failed in terms of directly helping the students, the teachers made great gains by "learning how to function as a PLC group". They were then able to learn from this and to set themselves up better the following year. For example, the PLC helped reduce teacher isolation and increase cooperative teaching throughout the middle years. Prior to implementing the program and its associated strategies, "we each had our own little kingdom, 'this is what the grade 8s were doing, and this is what the 7s were doing and this is what the 5s are doing' but what we had to do was

stop and think about what we could do for everyone that everybody needs to know". Lisa thought that it was a shift in thinking and in the way that they were doing things.

Lisa saw that go further in the second year. Although it was slow to start, part of the instruction through the All the Write Traits program was also to be done with more professionals in the classroom, and initially, classroom teachers resisted this method. She noticed that as time went on and she went into the classrooms, the teachers quickly learned that she was, in fact, quite helpful and that this contributed to the classroom teachers' knowledge as well.

> Once they've seen that we can actually come in – we, meaning the ELO catalyst,
>
> as well as myself – we can actually make their job easier for them because we can
>
> do some diversifications stuff, we can differentiate, teach them new strategies,
>
> just give them something to put into their teaching repertoire…and they can just
>
> do it themselves from now on

As the year went on, the PLC developed norms of behavior at their bi-weekly meetings, when they talked about the cooperative lessons, and discussed what worked and what didn't work, as well as how to make things work.

After Lisa reflected on this, she commented that it was, at times, frustrating to work with people with as much initial resistance to collaboration, and she was very relieved that it was changing. She had to work with them as they traveled past this resistance, and this was difficult for her as she initially did not understand where the resistance was coming from. As they worked together, she noticed that the teachers realized the benefits. "We function differently together, and once they realize that there are some benefits to having two or three other adults in the room with their group of students, they wonder 'Holy cow why wouldn't you do this?'" At

this point in the working relationship, Lisa felt the success, and she would think, "OK. Good! I've gotten someone else on board". This situation would also result in the classroom teacher asking to do it again, which benefited both the students and the teachers.

Something Worked Here

In its second year, the PLC realized their ultimate goal, which was improving student learning. Although the group was more relaxed from the start, they quickly saw improvements in the students' work. She said:

> We saw success with the kids right from the start. And when we had discussions about what our students should be doing with writing, we saw the good things that were happening, and because we were staying consistent with that all the way through, everyone was seeing the same kind of results and felt good about doing it again, because it worked.

The fact that students' performance improved early on further motivated Lisa and she thought that it motivated the group because "you could see the success of some of the kids and I think that was a big thing". But as the lessons culminated, larger scale improvement could be seen.

> When you have a writer who can barely read a sentence let alone a paragraph, and by the time you're finished, this child has lots of ideas and is writing really good sentences, and he's putting paragraphs together that make sense, you're thinking, "Well something worked here!"

The students also noticed their own improvement. "They get down to it and I think that personally they see that that they have grown." She said that they had a writing assignment that past week, and students were given the requirements of the assignment. It required that they pull

ideas together into one piece, based on the six-point rubric. "We watched the kids struggle with

the idea and get focused and write. They are not due until tomorrow, but a lot of them sat with

other friends yesterday and today already and edited with each other…and some of them have

handed it in early. They see it as doable." She said that the students had developed a routine and

they know what to do.

> I look back to how they were six months ago and I think this never would have
>
> happened. It just wouldn't have. I know that when they go into grade seven, they
>
> will be much more competent and much more comfortable around the writing
>
> process. By the time they get into high school, they will feel a lot more
>
> comfortable with what they're doing.

Along with staff recognizing an improvement in student learning, Lisa saw the fact that the

students recognized it themselves as a large successful impact of their PLC process.

Success was measured through parent comments. They noticed that their children were

doing the program, and appreciated the unified approach throughout the grades. They saw their

younger children writing, using a strategy, and saw their older ones doing that as well, and

recognized it as a beneficial support for their children's skills.

Success had also been measured in terms of teacher learning. "There may be a bit of

handholding that first year. But I don't think they would need any more encouragement this year

to do it on their own". Lisa noticed that teacher behavior in terms of working with one another

had improved.

> "I think there's more trust. You can walk in and out of someone's door, and they
>
> don't ask what you are in there for…They're just a lot more open to us coming in

and teaching with them…There's a lot more collegiality around the way that we

are doing things than there was before".

The administrators were happy about it as well. They saw something measurable coming

out of the hard work that the teachers had put in. They had yet to celebrate, but Lisa was

looking at fine-tuning the celebration. They were thinking of having students do a culminating

writing activity where students would share their work and celebrate what they had

accomplished.

From Stress to Success

Lisa was aware of the success of the group, and attributed it to the fact that they chose a

SMART goal. She said that "it's been way more effective, and people felt good because it was

doable, there was lots of support, and it was measurable". Last year they felt stressed. This year,

they felt successful. They also discovered that it was not as much work as they thought it would

be, because they set an appropriate goal. Although they didn't achieve the success in the

previous year, Lisa said that it set the foundation for this year's work, so she didn't want to

minimize that. "We learned from it, and that was the big thing…I think we now know what we

need to do to do it again and again".

Lisa felt that the conversations were a large part of the success of the PLC. Not only did

these conversations help build support for the program, but they assisted the reluctant users in

hearing about the benefits to using the program, leading them to using it. Lisa thought about the

effects of these conversations. She noticed that the group was listening and went away from the

meetings and reflected on what they learned. She thought that they often came back to the next

meeting with new ideas or combinations of ideas, showing that they had reflected on what they took in. For example,

> When they say, "I would do this differently next year or I don't know if I would necessarily use that or that's not really a good example". I'm thinking "OK well when they go to do this next year, they will pull something else in". A couple of them have already gone someplace else and have pulled material and supplemented what they're doing.

This PLC created situations where the dialogue contributed to professional growth, and Lisa viewed that as a significant accomplishment and movement forward.

Reflecting on the processes that they underwent as a PLC, Lisa recognized that a supportive administration team was an integral part of their success. In their first year, when success was limited, the principal was the person who identified, to them, the success that they had achieved in terms of learning how to work as a PLC and the required foundations to ensure its success. At that point, she felt relief, because to her, he was saying, "look you guys, you didn't really fail. This is what we can take away from it, and let's build on it for next year". Rather than criticizing them and going over mistakes, he was creating a window of opportunity for them to continue learning.

Lisa took no credit for the success of the team. She said that she was not personally successful, because it was part of her job as teacher-librarian. Lisa brought the program into the group's awareness. She saw it as a potential tool. Reflecting on this experience, however, she said that she thinks if there hadn't been such a program, it would have been another difficult year. Although she knew that they were happy with the idea of the program after the first

meeting, she was still hesitant in thinking that it would be successful, because she needed to actually see the program in use. She thought about it and said, "so I was waiting. There was a possibility that they would just sit on their hands…and (then) one of the groups got started, and we got started, and another group took a little while, but once that person got into it that was it". At that point, she knew that they had achieved the buy-in as every class had begun using the program.

Unscripted Goals

Lisa's PLC set out to achieve the goal of improving student writing, but having taken root as the informal leader of the PLC, Lisa admitted to having underlying goals for the members of the PLC. "They are more rooted in curriculum and that was kind of what our goal was with a lot of the stuff that we were doing as well, so this was a good thing." She noticed that they had developed in their ability to incorporate the Write Traits into curriculum, and curriculum into the Write Traits.

Lisa also had other underlying hopes for the PLC. She hoped that some teachers would take on a little more leadership through their involvement. She determined that since an administrator wasn't driving the PLC, however, that there appeared to be one or two people that acted as its glue and held things together. She was hoping that would change. "It's about risk taking and being part of the team…If you're the one they kind of go to as a go-to person, you try to take a step back once in a while, and stay quiet. And hope that they'll take on more of the lead. It doesn't always happen, but it's the hope". Lisa was still waiting for them to take on some of the work.

Following Through

By the time of the interview, Lisa's team had, for the most part, already achieved the goal of completing the All the Write Traits instruction with the kits. Lisa had noticed that using this program had benefit spill-over to other areas, and commented that:

It's moving in and carrying over to other subjects. Our teachers are using the same vocabulary and the same PLC. We're teaching in other classrooms. The vice principal teaches in the rooms and the principal is now coming in and watching what's going on. He wants to know the vocabulary. He wants to know the language.

The success of the concerted effort had propelled the team into looking at what they were going to do next year. "The big question is "where do we go from here?" We don't want to let it cool. We want to make sure that it's not just a one-shot wonder thing".

As for the next year, the team was already poised with partial SMART goals in language arts, but Lisa was aware that if membership in the PLC changed, it would be important that the norms were reset and re-evaluated. Every new teacher would require consideration as a fully-participating member of the team.

Pre-Planning the Doable: Lisa's Thinking

Lisa's first interview gravitated around her belief that if the PLC had a resource that was clear and manageable at the outset, that her PLC would be able to maneuver toward success. Following the process of horizonalization from the first interview, Lisa's responses were based on the importance of the resource, the need for discussion as a team, meaningful discussions, the necessity of understanding the process, and learning to work together.

A Tool for School

Having had a year of experience in a less successful professional learning community, Lisa had an idea ahead of time of what pre-planning needed to happen prior to a new school year to ensure that the PLC would be successful. This pre-planning, in her mind, was critical to the team. She knew, based on the failure to establish a concrete goal the previous year, the team needed a direct tool or a resource, and as a team, they purchased the "All the Write Traits" tool for all teachers in each grade in their PLC. She described that this resource would lead the team to success. Her thoughts behind this decision were:

> Because I had used the kits before I was excited about it, because I knew it was
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> doable, and I had seen it work with my own class, and I thought, knowing my
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> own colleagues, we didn't want to reinvent the wheel and pull things from all over
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> the place. This was something that was already created by (for) grade 5-6-7-8. It
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> was doable. We can get a SMART goal that worked for the time frame. It helped
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> lay things out a lot more clearly for us and we could see a beginning and an end to
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> it. We knew that having gone through it once we could figure out a timeline that
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> was going to work for us, and give ourselves a little bit of parameters so just in
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> case the usual stuff that happened in the school year could drag us down, we
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> could get back to it. This would finish within our time frame. We could see our
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> goals much more clearly, because we could see the traits very clearly. And there
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> were tools that were there to help us with assessments. And we have a jump off
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> point, which excited people, because it was like "There's something here. It's

tangible and we can use it." It was a relief because we didn't have to go looking

for something.

As Lisa reflected on the group's arrival to the conclusion that they needed a tight SMART goal,

she excitedly added an anecdote from the mass that she had attended the week-end prior. She

said that it was just like the priest had told the congregation on Sunday. He said that no one's

perfect. If you want perfection, you'll never get started. Lisa realized that perhaps perfection

was what the PLC had been looking for the first year through the Math initiative, and this didn't

work. "We knew we had to go smaller and that we couldn't go so large, because it was too out

there". What they needed to do the second year was to take a look at something else that would

be manageable for them, work at it together, and make adjustments as they went along.

Lisa used her experience from the first PLC, combined with the knowledge of the

members, and concluded that the strengths of the resource translated into strengths of the

PLC's strategy. She thought it was clear and focused, which was missing from the PLC

the previous year, and that it would work for the team. She also knew that the layout of

the resource led to a SMART goal that would work. From the previous year, she learned

that the SMART goal needed to be tight even if small, rather than loose and widespread.

These were her thoughts:

A: I think our initial idea of this whole PLC was that we kind had to change the

world - you had to do this grandiose thing – and we came to the realization that

you could do one thing really well, and it didn't have to be huge, and as the year

went on, we realized that better. I think if we would have had a little bit more

time to work with it or take the mass goal and take the time to look at something

else, maybe we would've picked something different, but because this is what we were asked to do, we did the best with it that we could.

Q: Did you notice your thinking change around how you had the big grandiose goal, and then realizing that you could just take something smaller and stick with it? Did you notice or realize that your thinking had changed around that? Did you notice that that's what it was at the time?

A: I think so, yes. When we realized that we picked something that was too big that was part of the frustration.

Q: Did everyone realize that or just you?

A: Oh no - everyone realized it. People were frank at the meeting. People were frustrated, and you could tell from the body language that this wasn't working and that we picked this because we had to do it. But once we realized that we had to tighten it out and just focus on this one thing and that it was a doable thing, and we could assess it and be done with it and move on, it was like the inverted triangle. We had to keep focusing our attention until we got something that was workable.

As the end of the year approached, Lisa knew that the group had been successful. They had pre-planned their way to success, and had tangible results. To her, she had removed one of the barriers to success: lack of a solid foundation. "I think if the program had not been there to kind of be the catalyst, it would have been a difficult year." Lisa added that the program alone, however, was not enough. The next obstacle that the group had to overcome was accepting to actually use it in their classrooms:

Q: Right off the bat when you talked that you had this tool, you walked away from the meeting after the first day, you knew they were going to use it. Walking away from that meeting, you had to have known that this was a clicker?

A: They had to actively use it through. So I was waiting. There was a possibility that they would just sit on their hands. But the timelines were in there with the PLC meeting and because we had set up prompts for the writing, they sort of had no excuse, and one of the groups got started, and then we got started, and another group took a little while, but once that person got into it that was it.

Q: What did you think then?

A: It was like, "Thank God". Once they started we kind of knew that they would go with it and the ELO catalyst teacher and I went in and helped both of them work with the groups, because I taught both class groups before. I had them when they were in grade six, so I knew them quite well and that helped too. But the team teaching thing helped a lot because you can bring other things into it. They were quite good about it and it was a good experience. They felt very comfortable taking it on.

These thoughts and realizations around using a doable resource, and committing to a tight SMART goal were at the forefront of Lisa's planning and process, and in her mind, this learning was integral to setting the team up for a successful year. The mindset of the teachers, however, was the success factor, as not only did the program have to be fully accepted and used, but so did the teaching strategies that accompanied the program.

Meaningful Discussion

In planning to overcome the barriers to success, Lisa shared, to a large extent, her thoughts on the conversations in which the team was engaged. She found that the group was able to arrive at meaningful conversations that centered on curriculum, which increased the teachers' curriculum fluency in the subject. During the first interview, however, Lisa had shared that she was surprised at some of the questions the members asked her, relating to the curriculum. This was a frustration to her, since, as a colleague, she struggled with the lack of knowledge that her peers exhibited. Such an example was when they asked if they could integrate the resource with other subject areas. Lisa said, "absolutely". Her thoughts behind this were:

> Part of me was thinking "you are experienced teachers. You should know that.
> Absolutely, you can use other things". But I think some of my frustration was
> that all the other things that they were asking to do is part of the curriculum. We
> should be doing them anyway. So part of it was okay, because it was forcing
> them to teach with the curriculum.

This problem did not seem to be apparent to the members of the PLC, but it was a frustration for Lisa, as she could not understand the teachers' lack of curriculum fluency, and curriculum fluency was so important to her. There was a large benefit to the program though, and that was that it forced teachers to take another look at the curriculum. I asked her, "And what do you think about that, being forced to use curriculum?" She quickly added, "It's a good thing". Teachers were learning how to set SMART goals up, but were also required to take another look at the curriculum that they were delivering in the classroom.

Because Lisa had used the program before, she had hopes that it would really take-off with the group, and she recalled partly feeling good that it had taken off, but had mixed feelings about this outcome. The first was that these professionals ought to have already been using strategies such as what she was suggesting, so it frustrated her that she had to convince them, but taking the opposite viewpoint, this was also a reflection on the collaborative growth of the team. According to Lisa, "part of it is okay, because it's forcing them to teach with the curriculum". Lisa knew, though, that they now believed in her, and in the team. She felt that the next time they were to work together on another goal, she wouldn't have to push so hard. If she put something forward, they might try it.

The program led to meaningful conversations among the group, and Lisa was also able to think ahead to what she anticipated the conversations would lead to, and the flexibility as well as the limitations of the staff:

Q: You talked about how this year with the PLC, "because you have the common

goal, when we meet now we have a lot more meaningful things to talk about".

Meaningful as in what?

A: Because we're directed in what were doing, each meeting has a strong focus.

We don't have to backtrack and re-evaluate what that goal is. We know where we

are going to get to at the end of the PLC, so we have had some deadlines that

were set up and some people were able to get a little further ahead at the time, but

we were all going to the same place, and we were all using the same writing

prompts, because we made them together and we were using the same assessment

tools, and we were using the same language. We just talked about the same

things. We have not shared student writing, which is one of the things that we

have talked about that we should be doing but maybe our next meeting, which is

next week, we'll probably discuss that.

Q: What you think about that? That you're going to discuss something bigger?

A: Well it's good. I had this brainwave too - that we should do something where

we display our students' writing at the end of the year in a way to celebrate it. I

have a feeling it won't go over very well, because it's going to involve more things

in a very busy time of year, but it be interesting to throw it down on the table just

to see what people think of it. I think if other people are not willing to run with it,

then it will probably just stay where it is. People might do something within their

own classrooms and maybe not necessarily school-wide.

Q: What did you think about that?

A: Well, that's okay, because we didn't discuss it in the PLC initially, and we

can't really start throwing more things on top of it. Leaving it where it was is

probably good enough and we'll continue from there.

Lisa's awareness of the potential direction that PLC conversations could take enabled her to

anticipate topics, but to also anticipate solutions, like when she decided that it was OK that they

did a culminating project in their own classrooms.

Lisa's anticipatory thinking occurred not only during discussions, but she applied it to the

processes as well, as she described her thinking and frustrations regarding pushing the program

on resistant members:

Well, you can't tell people what to do. You can suggest it and sometimes people

just will back away, if you're too aggressive, and I don't like to be really

aggressive, but I liked the program, and I thought if we had no other place to start

with these guys, this was a no-brainer to start with and it took a while to get them

to open the box, and look inside.

Q: Did you know or were you thinking, process-wise, that would happen with the

others in the group?

A: Hoping big-time.

Q: So hoping big-time and in seeing it realized in grade eight, what were you

thinking?

A: It feels good…I thought the fact that people did follow through with it and

they felt success of it as well. Just for the kids, I felt glad that they were doing it

because I think that they were better off for what we did this year, but I think staff

too. They were more rooted in curriculum and that was kind of what our goal was

with a lot of the stuff that were doing as well, so this was a good thing.

The meaningful conversations and connections to curriculum led to learning, both for the

students and the teachers, and this led Lisa to thinking that this professional learning

community was dynamically successful, and was excellent professional development for

the staff.

Lisa didn't believe that conversations such as those would exist in a large group format

without the existence of PLCs. She thought that they may take place among two teachers

helping each other, but not to the same extent. She admitted to having done more professional

reading within the last five years in her entire 27 year career. She attributed this to the fact that the PLC helped teachers focus on things that were meaningful, and it helped change the ways that teachers work. "(E)ven if you get them to be open to one or two new skills that they're putting into the program, it's a good thing". In addition to that, Lisa knew that the success of the conversations was because the group had developed norms of respect and trust as the year went on. "I think a lot of that is the mutual respect for each other, and that understanding." This respect created the safe and trusting environment for the conversations to take place.

It Was OK to Fail

Lisa described two years of experience with a professional learning community. She described the first year as harboring a lack of success, and the second year as a great success. Lisa recalled that her thinking changed around the first year's failure, and that in fact, it wasn't such a failure at all. The members learned to work together, and they learned to discuss. They also learned what was necessary at the outset of this PLC to lead it to success. We discussed the following on success:

Q: You talked about the PLC the year before. You said, "we did not have a successful experience with the PLC and part of it was that it was driven by the first steps in math. It was driven by the math performances, but it was geared more toward the younger kids and we couldn't find it making sense for us. So we floundered all year." How did you feel then about that or about PLCs or about the experience? What were you feeling?

A: I was frustrated. It seemed like every meeting, we were changing our goal, and it became like we would say "this didn't work". The tools that we were trying

to use didn't fit. It was so difficult to get a handle on it. And we did for the first

two or three months, but we kept changing what our focus was because we

couldn't find something that worked for everybody, or that everyone felt good

about. We looked at things to do with math terminology, and we realized that

somebody's sheets didn't have the same terms as other people's sheets had. We

had to go back and start again, and everything we sort of went to do didn't apply

and we were going back to curriculum to make sure that we're covering the

strands within those areas, but they didn't always match. It became more difficult,

and we were all at different places, and people weren't thrilled about it. We just

got frustrated.

Q: What made you frustrated? What was your thinking behind the frustration?

A: I think because we didn't have a lot of direction in terms of where to go. But

part of the thing with the PLC (last year) was that we discovered that the more we

did this was that we were the ones that were basically driving what was going on.

We were to look to what we wanted to see happening for the kids and we all had a

different expectation. I think and we had a different view on what we interpreted

the information as, and it was a great discussion for us because we learned a lot

about the terminology ourselves, and we learned a lot about how to get the

information across to the kids, so, what we end up taking away from this whole

process wasn't so much a learning tool for the kids, but it was learning how to

function in a PLC group, and make our SMART goals better and what we learned

we learned for us for the next year.

At a meeting, however, the principal spoke with them and told them that the group was successful in its first year despite missing the initiative. Sometimes, the success is in learning the process rather than just attaining the product. I asked her what she was thinking. She said:

> I thought it was kind of a relief to have that kind of support, because it meant that
> it was OK to fail. He was really good about taking a look at that and saying, look
> you guys, you didn't really fail. This is what we can take away from it, and let's
> build on it for next year.

Lisa thought that it was successful for several reasons. The group knew that the students were learning, so they felt success from that. However, Lisa felt that they were also successful because teachers came around to incorporating new strategies, and were forced to become more fluent in curriculum. She thought:

> A: I think it was successful in a couple of different ways. It was successful,
> because the group had a common goal, and we all worked towards it and people
> felt happy about the tool that we were using and how we went about it. It was a
> bit more relaxed, and we saw success with the kids right from the start. And
> when we have discussions now about what our students should be doing with
> writing, we see the good things that are happening, because were staying
> consistent with that all the way through. Everyone was seeing the same kind of
> results and felt good about doing it again, because it worked.
>
> Q: Do you have a personal feeling of success?
>
> A: I don't know if I personally feel successful. I mean, I can lead a horse to water
> but I can't make him drink. When they take off, and they take it on their own I

think "good. That's great". But I think first and foremost I'm a classroom teacher and I have to worry about my students first and I like to think that I'm making an effort to follow curriculum. Yes it annoys me when not everyone does that. I can't make them do it. Good thing were moving in that direction.

Although Lisa realized that she could not directly tell a teacher what needed to be done in their classroom, she found that the PLC created the opportunity for discussions that helped teachers connect to curriculum. She said:

We had been a little bit frustrated, the two of us, that were teaching there, that the teachers had not been connecting with things, but then we had to stop ourselves and we had to think "OK, let's think of where they were in September and where they are now and we have seen definite growth all around the board", and we felt good about the success, but I think a lot of it was because it's a sustained program, and that we were consistent - two days a week since the beginning of the year, and every day this is what we do. We tried to incorporate in all other parts of the curriculum too. And they felt a lot more competent; therefore, off they went and they just do it.

The PLC also discussed strategies to incorporate as they worked through the program. She said, "One group decided that they were going to trade work and share it with another and have each other mark the conventions. Someone else said, "Well that's a good idea", and they tried to expand on it. And someone else said, "I don't know if this would work in my group so I tried a mixture instead." I asked her for her thoughts as this discussion unraveled:

Q: So you could already see that the wheels were turning. What did you think when you saw those wheels turning?

A: I thought "it's a good thing". It showed the success of what we were doing, because you could see already that another group was going to benefit from this even more than that year's group because the teachers were now comfortable with the material. They might do it in a different way, just like we all would, but they were comfortable enough with the program to just go with it. I felt a bit of relief, because I pushed the program, and it kind of sold itself. They'll do with it what they want, and I'll do what I want, but it'll enhance whatever else we're doing.

In the second year, the principal was no longer called to say that process success was just as important as product success. When he wanted to be involved more deeply, Lisa was pleased with herself and the group:

Q: What were you thinking when you went up to your principal and you were talking about the success of the group and he said, "This is great!" What were you thinking?

A: Well, there's always that piece, the accountability with administration, and we were pretty good about keeping him totally informed about what's going on - even if he hadn't attended the meetings. So he saw a lot more interaction. He was just happy that everybody was talking about the stuff and everybody was focused and going in the right direction, and the interesting thing though that had come out of this was that he was the one that started stopping us in the hallways asking "How do you do a RAFT?; Can you show me how to do this?" And I said "OK come

here – I'll teach you". I knew that his own children were going through this and

he didn't want to be left behind, and he saw the buzz and he wanted to be part of

the buzz, and that was a really good thing for principal to do that.

Q: How did it feel for you?

A: It felt good, because I thought "I can teach him something". And he made a

point of coming into all our classes to see what we were doing and get a feel for

the programs because we told him about the programs. But he hadn't necessarily

come to watch it, but now he's made a point to do that. So if he needs to talk to

parents or he needs to talk to anyone else about what it is that we're doing, well

he has a little bit more insight into what's going on.

Lisa's thoughts ranged from frustration to relief as the group hammered through the

operation of the PLC until they found something that would provide them with the

measurable results that they were looking for. Although the success of the PLC in its

first year was not evident to the group without the principal pointing it out, Lisa's

experience in the PLC allowed her to change her thoughts of success to one that included

what they learned about the process, as well as what the students learned as a result of the

common goal.

I Didn't Understand the Resistance

In the first interview, Lisa described that the workload of members in the PLC was

inconsistent. There were members who appeared to be committed and others who chose to sit

back and not get fully involved.   This frustrated her:

Q: You described "the teachers who are resistant always see us coming in and making new work for the program and there always been resistance to that". What were your thoughts on this resistance?

A: It was a bit frustrating sometimes because I felt like I had to chase them down when it was to their benefit to have a couple of other bodies in the classroom helping out The teaching and the planning and the marking. Once they let us in their doors and they realized that we were not writing reports on their teaching performance and that we were not going to tell on them about anything, they realized that we were just there to help and all of a sudden it was *"Oh OK. Can you do this again?"*

Q: What do you think of - right, then?

A: I thought "OK, yes this is my job. I can do this again".

Q: Did you think anything else? In terms of their evolving?

A: Well, I didn't understand what the resistance was to start with. Maybe they were just not comfortable with someone else watching what they do in the classroom. And a lot of times that was not our role. We worked together. We didn't all teach at the same time. We functioned differently together.

Lisa was initially frustrated by the resistance among some members of the PLC, and she didn't understand its source. Through reflection, she thought about what they may have been feeling, to help her sort through her thoughts. She assumed that those members were just not comfortable with the collaborative teaching strategies, and that they just needed to experience it

to understand it. She felt relief and support when those members finally did open their doors to experience the process, and came on board with the initiative.

A Different Ballgame

Lisa learned a lot from the opportunity to be involved in a PLC two years in a row. Thinking back on her learning from the first year to the second, we shared the following:

Q: What to do you think about that learning now? The fact that you had this big thing before, and then you realized it was too big.

A: The start of this whole thing this year was a different ballgame for us because we knew we had to go smaller that we couldn't go so large, because it was too out there. We had a place to start this year that was a lot more manageable.

Q: And what did you think then?

A: We were energized, because it was doable. It was not crazy. It was a good feeling. And because our administrators were good, they went through this last year and a said, "Look, you don't have to do this. You can pick two goals or a three-year focus on one." They totally supported what we were doing, because they thought it was a good thing. They knew from looking at the materials themselves and seeing that it was a doable program and that someone had tried it before - it was good.

Q: So you were walking away from the meeting that you had in September, or in June, and you were not talking to anyone. What were you thinking?

A: I was thinking: "I'm glad we're doing it because I had actually used the program last year." So I felt comfortable and confident because I thought, "I get

to use this again". Our coordinator was really good, because she said "You've done this before and you can walk them through it and hold their hand. It's not like everyone was doing something new and you can say you tried this and they should try it out" and that's what we did, and the fact that there were four or five of us doing it was good. Everyone had a different take. The program was there. And then they started their own ideas, saying "next year I might try this and the next year I might try that". And even if it's not because they were part of the PLC, it was them thinking "I can do this."

Q: What were you thinking when that happened?

A: I was thinking "Thank goodness!". Sometimes you think you're putting this stuff out there, and you're suggesting it as a tool or you suggesting it as a tool or an idea, and you don't get much of a reaction. Seeing people use it and saying "hey, this works". You're thinking "Great! Good!"

Q: What were you thinking then?

A: I was thinking, "the next time I suggest something maybe they won't think I'm out to lunch. If I put something forward, they might try it". I liked seeing the fact that they were comfortable with it now. And they might yet still need somebody to guide them through it because it was difficult for some of them to open the box last year. (I was a little bit annoyed when I ordered the kits because not everybody opened them and looked at them. They waited.) And it was not until they actually had to do it then they opened them; and when we actually got started they were thinking "Oh this is cool. We can do this. This is okay!"

Q: I can't even imagine the feeling you must've had when that happened…

A: Yes, we had spent a lot of money on that program. It was like, "Thank

goodness it's now being used. Everyone has them in the classroom."

This was a different ballgame for Lisa. The success of this goal, once she put it in action, had

little to do with her and a lot to do with the thinking of other members of the group. Lisa had to

deal with that. Her thoughts ranged from frustration to elation, as she waited for members to go

through the process and through the kits and get involved with the goal within their own

classrooms. Naturally its adoption resulted in a feeling of relief and reinforcement.

Professionalism: They Got Used to Us

Through working with the new program, not only were the strategies that the teachers

used in the classroom influenced, but it also influenced the members' levels of trust and

professionalism between and among one another:

Q: You mentioned in your answers whether the behavior of teachers changed,

and you said you think there has been a lot of trust. You said that the teachers

were now a lot more open to you coming in and teaching with them. What were

you thinking there?

A: Yes, I really believed that. I thought the more we worked together and the

more we worked in the class and the more stuff we shared people would say "OK

yeah come on in and go ahead do that".

Q: How did you feel when you walked out of a collaborative class like that?

A: I liked it. I team taught when I was teaching at a middle school, so I was used

to having another person in the room; and working with the ELO catalyst we

work together. The team approach is fun. Your ideas aren't always the best ideas, and getting someone else's viewpoint really enhances a lesson and I find that when I go in and work in another classroom, that the kids are used to you and they are comfortable with you and you get a different vibe from them than their own classroom teachers do and they are much more welcoming too because they see you as coming in, and they're saying "OK what are you doing here today?" And the teachers are now perfectly comfortable with us coming in and taking over the class and working with them in tandem now. They got used to us.

This experience opened the door for teachers to look for guidance and a meaningful form of professional development.

I think the PLC gives us more direct focus. We've always been involved with our various programs…but this way is more accountable. And I think that's the big thing. It's not like we're on a professional development day or at a workshop and taking it and not doing anything with it. This PLC is forcing us to actually look at performance outcomes. It's forcing us to be accountable with curriculum and you have a part to play with your students and staff. I don't think it would be definitely this focused if we didn't have to do the PLC's

Lisa understood that this collaboration and cooperation made a difference in terms of student learning, but she also realized that until the process occurred – until the members experienced the benefits - they were reluctant to get involved. The process increased the level of trust among one another, and once this happened and strategies were adopted, Lisa was pleased.

The process most likely also changed the way that they would approach collaborative opportunities in the future.

Summary

Lisa learned a great deal from the first year to the next because of her two completely different experiences with a PLC. At the end of the first year, she felt that the efforts were a failure, but with the help of her administration, she reflected on its process rather than its product, and realized that they learned a great deal. The team learned that a specific goal was necessary, and that they did not have to take on a grandiose goal. Reflecting on this knowledge, she used her new understandings to lead the team to success in its second year.

Lisa tended to be procedurally metacognitive. She tended to reflect on the why and how of the PLC, and focused on aligning the team for success in its second year. She knew from the make-up of the group that they needed a concrete program, and she found a program to meet their needs, but she was forced, once again, to reflect on the process of the group, as immediate investment from all members did not occur. She reflected on the why, and realized that the members were just not accustomed to the strategies that were required for such a program; thus, they had to experience them before accepting them. Once they accepted the new strategies, the members were ready to embrace the approach and move forward.

'P' Is for Professional: Jacki's Story

Jacki taught grades one and two in a mid-sized elementary community school. Early in her career, she was employed as a teacher associate. Jacki then earned her education degree and completed 23 years of teaching in four different schools in the same school division.

Jacki was a member of a primary years professional learning community. The first school in which she taught used the professional learning community model. Prior to that school, she was curious as to what the buzzword was all about, and since learning about it, she was then comfortable working with it. This was her PLC's second year of operation, with almost the same membership. As a very warm, personable and soft spoken grade one and two teacher, Jacki did not take on the role of leader of the PLC, although she was asked to by the school administration. She planned to do a lot of listening, and not to force her opinions on others.

When Jacki transferred to the school two years prior, she was automatically inducted into a PLC as a primary teacher. She recalled experiencing feelings of fear when she came to the school, because she was going to have to work with something new. As she thought about it, though, she came to reason out her fear. "At that point, I had about 20 years experience teaching, and part of that was the problem. People assume that you're old hat and you probably have all the answers, and I didn't feel that way about PLCs". She was approached by the principal, whom she already knew, to be the leader of the PLC, but she thought that she didn't know enough, so she felt it was better for her to watch how the PLC operated for a year before assuming the leadership role.

The Planning and the Process

Jacki's professional learning community consisted of a leader and several members of the primary teaching team. Everyone felt as though they were equal partners as members of the PLC. There was a PLC group leader who was also a member of the school's ACT (Actualizing the Curriculum Team). The usual process was that the ACT membership met, got direction, and

then led the PLC meetings. This process allowed for the leader to receive direction from the administration, and use it to direct the PLC meetings.

The administration had a part to play in the norm setting of the PLC as well. In the first year, the principal directed the ACT members to relay the message that discussions outside the PLC goal would not occur during the PLC meetings. He said "that the (teachers) need to understand what the PLC is and isn't for, because they need to understand that that's not part of it". Jacki recalled some of the members feeling like they had been chastised, or that the message was condescending. She, however, felt differently about it. She saw possibilities, and didn't share this opinion at that time.

Through the ACT members, information was disseminated quickly; however, it set up a system of reliance. Jacki noticed that during the PLC's second year, there were several meetings where the ACT group did not meet prior to, or the PLC did not meet following the ACT meeting, so the group had to work under a slightly different process. This different process proved to be less successful. Jacki said that it was evident through the different level of success from the first year to the second. The first year, the group chose a focused goal in math, and was directed by the administration. This focus resulted in a successful outcome. The second year, they chose a reading focus, and found it more challenging. Jacki felt that the advanced organization from the administration and the PLC leaders were crucial and missing in its second year. "Last year, it was quite specific", and the group enjoyed that. The principal gave the focus and the PLC leader tried to keep the group on task.

The first year, her team chose to take a small piece of the Math Makes Sense division-wide program (and curriculum), and planned to cover the objectives of the days of the week and

the months of the year, and focus on them. They used the SMART goal format (Specific, Measurable, Attainable, Results-based, and Time-bound), and decided that by November 15th, students in grades k – 2 would be able to name and re-organize, in and out of order with 90% accuracy, the days of the week. Jacki chose to add the days of the month to this goal for her group, as she felt that the grade two class needed more of a challenge. She said:

> We designed a pretest that we could all use it, and as a PLC, we all worked on
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> this…and we gave the pretest before and gave a test after and marked it and we
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> went back (saw that) yes, this percentage of students could do it. It was feedback.
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> I felt good about myself because it worked.

This goal was accomplished within a short time-frame, as planned, and results were reported fairly quickly after they began. The entire beginning to end process took about six weeks, although Jacki found herself reinforcing the concept with her students throughout the year. "When we were really into it for that six weeks it was mostly about the SMART goal". She anticipated that the group might discuss what they didn't like about the Math Makes Sense program, but that didn't happen. They were focused on the goal and the processes within the PLC. Things seemed to fall into place for them once the goal was established and monitored.

The second year, the PLC changed its goal. They chose to focus on student reading. Through discussions with the principal and the PLC members, they came to the conclusion that student reading was an area of need. They also had Running Record data that supported their choice, as it indicated that the students were relatively weak in reading. She recalled that:

> We decided to use the running record data because we had the graphs and the
>
> sheets. We looked through it as a group and talked about it and noticed gaps and

things and asked, "What does this tell us? What should we be doing?…What's

different?"

Part of the reading plan at the school included a take-home student reading program. The

success of the take-home reading program depended on each child taking home a book at their

reading level every night, reading it with their parents, and returning it the next day. At school,

someone read with them as well, and they exchanged the book for a new one.

The discussion around this data stirred up many opinions, which developed into valuable

conversations which raised questions about why the reading levels were lower than what they

wanted. She recalled:

That's when conversations like "my kids aren't reading at home" and "I can only

do so much during the day" and "we're giving them books at their level and their

parents know about the program because we've had it for three years now and all

of a sudden people aren't reading with their kids – what's different"?

Jacki recollected that some members thought that if it was the parents' (fault), that was

fine, but if it was the teachers' responsibility, something needed to be done at school. This

statement was uncomfortable for some, and blaming started to occur. "There was one meeting

we had before that, where we discussed it and there was some negativity because people were

saying that we have a take-home reading program…and a lot of the kids are not participating and

this brought up a lot of walls". Members of the PLC continued to complain that the students

were not reading at home. "There was a lot of blaming". Then one member suggested that the

teachers had to find ways to get the students to read and that perhaps inviting parents into the

school to read with the students during the day was an option. One teacher commented that there

were no volunteers in her room, but another teacher quickly added that she had too many

volunteers in her room, and she would love to share them with another class. When all was said,

it was quiet, and the meeting ended. They decided that they needed to look at it again the next

time, at which point there was less tension around the subject. She described:

> There were some conflicts and everyone went away and we talked about it once
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> again on the CDD day, which was about two weeks later, and then people were a
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> bit more open to it, and it started to take off a little bit.

Jacki was hopeful for the next meeting. She hoped that the discussion around how to schedule

parents might come up, as well as discussing how to recruit them. If it didn't, she was planning

on bringing it up. She said, "maybe the parents won't come, but it's OK to try it with me right

now. I'm not jaded yet". She felt she had energy for this initiative, although other members

were skeptical. When they discussed it the next time, the decision was made to contact parents

and ask them to come in and read with their own child's class, and with other classes as well.

Succumbing to Succession

Through both of Jacki's years working with professional learning communities at her

school, she reported that both goals were set based on the Learning Improvement Plans at the

school. She said that, "one principal would give us an outline of exactly what we were to do in

our PLC…(while the other principal) has more to do with learning improvement plans and that is

quite specific". The LIP served as an anchor to the PLC goals.

The difference that she noticed, though, was that the first principal controlled the weekly

discussions at the PLC meetings, and the next one did not. Jacki thought that the second year's

principal provided less direction than his predecessor. "The complaints this year have been that

the new principal doesn't give us any direction on that". The PLC enjoyed the structure that the previous principal provided, which was quite specific. They were given something to work from a couple days before the meeting and they had to get through it. The second year, there was less structure and the group had to sort through their goals themselves.

Realizing the Gains

Jacki identified success from the PLC experience in three areas. The teachers in the group were starting to work well with one another, members were beginning to reflect on their own performances, and student learning outcomes were positively affected.

Focus and Collaboration

Jacki reported that the collaboration through the PLC definitely attributed to achieving the goal. She added, however, that prior to the introduction of the PLC, similar growth had been achieved in schools where there was a collaborative culture, "I think there was a lot of collaboration but it was maybe done more informally; but now with the PLC's it's done more formally". Its existence provided the structure to meet regularly, communicate, plan for teaching and learning, and keep track of results.

The PLC allowed her to communicate with other groups and find out what they were doing. "I think it's a real shortcut in a lot of ways to find the other ways to solve a problem or path to learning." It gave her the opportunity to bounce ideas off others that one may not be as likely to get together with.

Jacki made reference to the fact that the PLC group did choose to stay on task when they worked on the math goal in their first year. She thought about why this was so, and figured that because it was the group chose a small part of the program, so attaining the goal seemed

manageable. She also thought that it was "because we had choice in which part of the program. It was supposed to be math, but beyond that we could look at whatever we wanted to. It was a group consensus". She regretted that they had not continued with a similar goal the next year, and rolled off the previous year's success.

Also key to the first year's success was that the common goal was a SMART goal. She said, "it's hard to write those goals, but once they're there, it's pretty easy (to follow). We did it; we didn't do it; and if we didn't do it, where did we go wrong? I like that. Concrete objectives, I guess." Jacki hoped that the PLC group would continue from the last year. "I saw good coming out of it…I liked the support from it so I was hoping that would continue".

Professional Challenge

The PLC meetings and process caused Jacki to reflect on her own performance in the classroom. When the group was planning an initiative or setting a goal, the discussion and the questions that the group asked got her to thinking, "How am I doing this? Is it something I really need to work on? Is this going to be easy? Or maybe…I already do this and this is going to be a breeze". Part of this process, for Jacki, included weighing herself against the rest of the group, and this would not have happened if she had not been involved in the PLC.

She noticed that sometimes, reflecting happened right in the meetings. "After that, I needed time away from the group…I go away thinking about it quite often. I take the binder home because it is on my desk…and I think about it some more and then plan for whatever kind of follow-up I need to do". The locations, materials and deadlines kept Jacki focused.

She also felt a sense of professionalism through her membership in the PLC. It focused her attention on matters of improving student learning. "It guides me toward improving their

learning…I'm just more present to the kids perhaps during those instruction times…it's stuff I should be doing anyway, but when it's the focus of the PLC, it just comes to me more often". She realized its benefits to her own professional growth. It was a balance as well. Jacki knew that one thing might take over another for a while, but talking about goals and priorities helped her reflect on what needed to be done.

Jacki had insight into why the group was successful the first year, and not so much the following year. She noticed that there was a difference between the types of goals that the PLC had chosen each year. The first year, they chose the days of the week goal, but had no idea whether students were experiencing difficulty or not. The next year, they chose an area, reading, where the children were already showing difficulty.

I think there's a sense that it's more challenging maybe. I think last year, from my standpoint anyway, it was more of interest, I think. Like "we'll see where the kids are now and see where they will be after we teach it to see if there's any difference". It's kind of neat; it's measurable. (Last year) it was an interest thing. This year it seems a bit more serious.

She said that last year's goal was something that they could achieve. It wasn't a deficit area. "I guess it was built-in success, but this one is a tall order. We're going to give it a shot, but there's no guarantee that anything we do is going to really change these numbers". She was not sure that others felt that way, but perceived that when they were defensive about certain aspects of the goal, they must have felt pressure to change things and perform better. This was a substantial professional challenge.

Discussing Versus Venting

The PLC discussions were not always smooth and conflict-free. Rather, Jacki reported that there were discussions that were tense as members shared different points of view on topics which teachers were defensive or emotional about. As these discussions progressed, Jacki often found herself reflecting on what was happening, and using her reflections to guide her professional actions.

Jacki, following reflection and mental re-wording, would usually bring up her opinions. This was because she felt that the group was professional, and even if they didn't like what they were hearing at the moment, it made a difference in the long run. "We deal with things and we think about them and if we have a little doubt that maybe we're slamming a door or putting up a wall, I think most people, given a little time, will try." She benefited from saying what she thought about during the PLC meetings, and so did the group. Jacki believed that in a situation where a PLC did not exist, these opportunities to share and learn could still take place, but would be less likely. She said:

> If it's not a PLC then it's informal and it turns into someone just venting and getting it all off their chest and they're not as likely to see it at the time that we're working together to solve a problem. They do see it as a chance to gripe about what's not working.

The resulting difference is that it's a conversation without collaboration. Jacki said that in her opinion, what would be missing would be "the 'P'. The 'Professional', I guess that makes it feel like what you're saying then isn't or might not be taken as an attack on a person". She added that in a PLC,

people have a sense that you're speaking in a professional rather than a personal

voice. And saying that, if someone popped up right now at my door and wanted

to talk about it, it's more personal. When it's a group of you bringing something

up and people are offering their ideas, I think it's just seen as more professional.

Jacki recognized the power of reflecting on the PLC experience through the interview process,

and realized that it had been a benefit to her. This newly acquired understanding of the necessity

of allowing the process of the PLC to take place resonated with Jacki to a point where she

figured that it should hold a place in the regular functioning of the PLC throughout the year.

Tangible Improvements

Data collection for this goal was through running records reporting. The teachers worked

off initial data that were collected in October by the teachers, and submitted to the division. The

division took the data and displayed them in graphical form for each school with individual

school information, and information comparative to the division. Jacki looked at the data in the

early months of 2008 and felt that the students were behind, but the data had been collected in

October, so any student gains over that elapsed period of time were not included.

Jacki had already begun testing the children, and felt relieved as the situation, she felt,

was not as bad as she initially had thought. The students had grown since the beginning of the

year. She felt that with their plan to read more and use parent volunteers, the goal was

attainable. Jacki added that she was doing her best with it, so if the goal could not be attained,

she would not worry due to two reasons. One was that she believed that all she could do was to

do her best. The second was that she believed, in a more defensive perspective, that "there is

always a safety valve there. (For example) this child has a 40% attendance rate. We do what we

can do". There were many other factors at play that present obstacles to the students' success in reading. She was comfortable that failing to attain the goal would not result in a reflection on her abilities as a teacher.

Even though the second year's goal might not have produced the results that Jacki was hoping for, she had noticed changes and improvements that made the whole process worthwhile. If the PLC didn't get the results they wanted, they still learned strategies and approaches that improved learning for that year, and for the future.

Jacki felt that the PLC was a positive and supportive model. "It's an efficient way to reach goals as a group". This was due to the fact that the teachers were accountable in writing. There was an expectation that they would participate. The results would be studied. If she was to work in a school without a PLC, she would miss it. "I've come to value it…I like the formalities and the guidelines and the black and white…I see it as a tool". She had planned on helping the team celebrate the data when they got results in June.

The Structure of the Goals

Jacki identified that her years of experience, and her comfort level with talking with the group and helping make suggestions resulted in her taking on the role of the experienced teacher. Through this role, she felt compelled, on occasion, to not let the conversations dwell on the negative, so that progress could be made. She realized the need for a positive attitude and open minds as members of the PLC, and actively steered the conversations toward that, especially when complaints started to emerge. Jacki realized the need for a positive attitude and open mind, and contributed to making that happen within her group.

Although Jacki felt that the first year's PLC was successful, she was not as happy with the PLC's experience in its second year. They had not felt a similar success. They focused on language arts, helping students become stronger readers. She attributed some of the problems to a loose-set goal, and to conflicting goals from other initiatives (such as the Math Makes Sense program, the social skills goal or running records) which interfered with their work and took up their time. These other goals seemed to detract the members from being able to focus on the original goals.

Another problem that the group encountered was that they found themselves changing their focus as the year went on. Part of that problem was the loosely-set goal, or perhaps the absence of a SMART goal altogether. Jacki recalled:

> Last year, it felt more efficient. It was bing-bang. Let's work on this for two weeks and then we'll check and see if we need to revise and then move on to something else. If it's not accomplished, maybe at that point we decide that's okay or move on to something else… I'm reflecting on where the SMART goal is (this year) and where the measuring is, and I feel like we're still doing things, but we're almost at a point where we're schlogging through with what are we going to work on, but we haven't got the point where we're setting goals.

When contemplating whether or not this year was a waste of time, however, Jacki said that it wasn't. In fact, she sensed a release valve through a less-structured environment. "We can bitch and complain and get it out there, and then someone takes a breath and they say OK, now what can we do to help the students?" Despite this, Jacki still saw a lot of growth from this year. "I think the primary teachers felt a sense that it was worthwhile. I don't think they see it as

a waste of time. We are achieving things; we're measuring things. It's towards improving learning". After reflecting on the structure of the past year's goal, Jacki realized that although they aimed to improve student reading, it was not a SMART goal. "This year it feels like we're not really spinning our wheels, but a lot of foundation stuff is happening for next year." Discussions have happened and decisions have been made that would contribute to the next year's plans.

As she said this, Jacki decided that as they rolled into the next year, she wanted to make sure that they have a SMART goal in place. She realized that having a SMART goal kept people on track. "Probably the structure thing again. (Without a SMART goal) I'm thinking in my head, 'it doesn't stand as much chance of succeeding', because, if it's not cut and dried, I just assume everyone is like me, (because) it's easy to let go or not get around to it and slip shod." Her team, along with the school, will be focusing on social skills and social skills programming next year. Jacki was already thinking ahead to how these initiatives might look as SMART goals.

The Thoughts of a Newcomer: Jacki's Thinking

Through the horizonalization process, Jacki appeared to gravitate toward certain aspects of the professional learning community experience, so I asked her about her thoughts based on those key points. These points included a need for: structure; a defined goal; administrative direction; seeing results; professional dialogue; and an awareness of the needs of different members of the team.

Structure Equals Growth

Jacki admitted being somewhat fearful and apprehensive about her transfer to her new school, but interestingly, through this fear, she was also excited to be learning about professional learning communities. Having not been involved in a professional learning community before, she knew that she would be learning about them as they were mandated by the school administration. She elaborated on her thoughts through this discussion:

Q: You talked last time about being new to the PLC experience coming to this school. You mentioned that you enjoyed it because it was the first time you had really worked with that kind of data across grade levels, and it was kind of neat. What were you thinking about that being kind of neat?

A: Probably that I like the more formalized way that it was taking place. I was seeing that more structure equals more possible growth for me.

Q: What emotions did it bring up?

A: A little bit of fear, because you don't know. At that point, I had about 20 years experience teaching and part of that was the problem. People assumed that I was the old hat and I probably had all of the answers, and I didn't feel that way about PLCs. I felt that way about informal staffroom chats maybe, because I felt that I had something to offer from experience, but not about the PLCs. The old principal had told me that I should consider taking on the chairmanship of this, but I thought, "no, It would be better for me to watch how this operates for a year". People assumed that I would know what this was all about. I felt stupid. A little fear. A little intrepidation.

Jacki knew that her experience made her a leader in the school, but felt that she was not prepared to take this leadership on in an area that she knew little of. She did, however, already have an opinion about the PLCs. She knew that there was something about them that she liked, perhaps the formalization and the structure, and this kept her interested.

Throughout the first year, Jacki grew to enjoy the structure of the PLC – the agendas, the discussion time, and the follow-up. She learned, from the first year to the next, that the structure of the PLC made a big difference to its functioning. She confirmed that in the first year, the PLC was more structured, but she was disappointed to discover through experience, that the next year, it was missing structure. She described her thoughts on this:

> Q: So you said that particular one last year worked, but that this year, the PLC is not as structured. What is not quite the same? What feelings are different? What's missing? What were you thinking?
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> A: Probably advanced organizers would be one because I know in the previous year we got an outline of what some possible, strongly suggested, things to discuss were at that week's meeting. This year, it's more like once we got there "here's what I need your groups talking about".

In Jacki's opinion, this loose structure made it less organized, and she realized that it was less comfortable for her.

The Effect of Succession

Having worked in a professional learning community for two years, Jacki was aware that the administration of the school had a great impact on the effectiveness of the PLCs. She

thought that this was both through the way that goals were set, as well as the expectations that administration placed on the PLC meetings.

Through her two successive years of involvement, Jacki observed the administrative leadership as the staff moved through the PLC process, and, questioning the journey, she began to predict their motives in leadership. She had in mind that even though the members were not achieving goals, perhaps the principal was thinking that the process behind the PLCs was more important. She illustrated:

This year it feels like we're not really spinning our wheels, but a lot of foundation stuff is happening for next year. "Where are we going to go with our school improvement plan"? Which is probably, now that I look at it, why it's appearing less structured. That's probably where the principal was coming from. He was looking ahead to our local improvement plan for the fall, but he was not wanting to leave it until the fall. In May, everybody thinks "Oh, can we just do this in September?" and then in September, it doesn't really happen. I think that he learned from that because he didn't feel good about that and then he wanted us to do that thinking – where did we lose track so that we could do a better job at that…

I think we're at a point where it's like a foundation. A time. Maybe not for this year, but maybe this is all main groundwork for next year. I'm feeling better about that.

Jacki spent time thinking about the administration's purpose in setting the stage for the PLC. At one point in the interview, she described a conversation that the PLC had where the

group wanted to drift into talking about the every-day, rather than specifically on the goals. The

leader reminded them that the focus of the PLC was to talk about goal related items only. Jacki

relayed that this caused frustration among some members of the group, as they felt that the

principal was controlling too much of the conversation. As for Jacki, she thought:

> I didn't feel that way. Through this person, I saw the enthusiasm of the principal
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> and I saw this thing is something new, and it was new to me and I saw goals, and
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> I saw possibilities. I was still learning that wasn't the time to talk about this or
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> that.

Through making informed guesses about the administration's motives, Jacki seemed to be better

able to stay on task. This helped her to create and understand the larger picture of the processes

behind the PLC, and avoid being frustrated or upset about decisions and directives.

Realizing the Value of Results

Jacki thought that it was important to just get results, even if they were small,

unsuccessful or inconsequential. She thought that there was an onus to be pleased with the

results, but realized this was not the case with the PLC. She felt happy that her group knew how

to plan for, collect and interpret data, whatever that data was, as learning how to use data was

part of the overall goal.

> Q: When you attacked the SMART goal with the math, you said, "we gave the
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> pretest before and we gave the test after and marked it and we went back and I
>
> kept both papers, and I said *yes this person or child can do that"*. What were you
>
> thinking then when you said *yes*?

A: I want to say I was pleased with the results, but I think probably I was thinking it was good feedback whether none of them could do it or whether 10% or 40% could. I think I was pleased that it was "here's what we're measuring; here's how it came out" and I can see it's giving me some information. I don't remember what the percentages were but it was telling me that we need to work on it or whatever. I felt that we met our goal. As much as we had not met a percentage goal about how many kids could do it, we met our goal to see where we were and that gave me that feedback.

Q: So you maybe didn't know that you might get that information before?

A: Yes. I don't ever think that I wondered whether or not it would work, but I thought it was neat that we have the information. We now had something that we could follow.

Achieving results of any kind, to Jacki, meant success. Now that she knew that data collection of this kind would work, she liked that, and she could work on further goals from there. If the data did not show the results that the group anticipated, it was still great information. She thought:

With any learning improvement, some kids are going to respond to it in certain ways and some aren't some aren't. In fact, that's probably more of a success, because the ones you got, great, but the ones you didn't, you're going to find another way and you get smarter that way. And then it's a process of learning the strategies too.

With Jacki, it was a matter of thinking that if they didn't meet an objective or a child hadn't learned, she would ask, *what do I do next?* She could then use what she learned to create other ways to teach and assess so that the students could be successful.

I Just Feel Better

The PLC contributed to Jacki's professionalism. She realized that discussions that took place in the PLC would not happen to that level or depth had the PLC not existed, but that there "might be collegial collaboration between two people in a hallway or there might have been some sharing of resources". She also said that the professional goals that the PLC set gave her the focus, the concrete objectives, that she needed. I asked her what she was thinking when she identified that the group didn't reach a goal.

Jacki commented that the PLC gave her a place for affirmation, so we discussed the following:

Q: You said that you weigh yourself against the rest of the group when you're talking about things. You're seeing if you're up to snuff or not or see if you're better than them or not. Obviously, that's not something you would say. How does that weigh into your professionalism?

A: I think that well, we don't always get feedback from colleagues or, you hear about the issues with parents when parents are upset, but there aren't a lot of pats on the back in general. That's not the way the world operates. I don't go around complementing everybody, so when I sit and listen to that, sometimes it's probably feeding me with "yes I'm doing OK".

She admitted that hearing members talk about strategies allowed her to do comparative thinking in terms of what was happening in her own classroom and with her own teaching, and this made her feel good about her work.

The structure and discussions in the PLC brought Jacki to a heightened awareness of the strategies that she used in her classroom. She found that having talked about the goals and discussing the best strategies served as a reminder to her to ask certain questions and follow certain plans as she taught. When recalling her thoughts following PLC meetings, she believed that it impacted her day to day thinking. She said,

> I just feel better, even if it's for 10 seconds I'm thinking "what am I supposed to
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> do to" or "what in the PLC doing for Tuesday". It gives me something to stop
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> and think about or be aware of during the day. Probably it pops into my head,
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> even as in teaching. Like with guided reading, and thinking "Oh, this is
>
> something I'm going to bring up among the PLC."

Jacki had a tendency to pause during her thought, so I asked her whether or not she had thought about the PLC in this way prior to the first interview. She admitted:

> No. I don't think I had thought about it enough. I just thought it's another
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> meeting that I didn't have to go to, and if I missed the PLC meeting it was kind of
>
> a blessing but it's sort of unsettling to me. It's not the same sense of
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> accomplishment. I feel better when it's running smoothly and we're doing it and I
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> see some positive outcomes.
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> Thinking about this is making me feel better. It's too easy to get negative and
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> think "well, you haven't accomplished anything in the PLC this year. It's a waste

of time." But I don't feel as much that way talking with you about it. And maybe the PLC, now that I'm sitting here thinking about it, maybe one of its purposes, besides improving learning, is to give us that time to kick the stuff around without feeling like we're getting anywhere.

She also thought about this in a metacognitive way, explaining how her mind works when she has the time to reflect and discuss:

When else will I pick the time to sit around and think about this like we're doing right now? If you weren't sitting here with me, would I be sitting here like this thinking "Gee, I wonder why I'm not happy with my PLCs this year?" But maybe when we sit as a PLC, I would be thinking about it and examining what I'm doing. I'm doing it more now, because you're here and I have the time, but maybe if I was a leader in another year of the PLC, then maybe I would look on it as a time to reflect on it too. Your whole project is starting to make more sense to me!

This sense-making occurred on the spot. Jacki described that she had the time to think, and this time afforded her the opportunity to examine her thoughts. We continued with the idea of reflection:

Q: You expressed that when you're driving home, things are going through your head and you're thinking about this and that, usually beating yourself up over stuff. Generally blaming yourself for whatever you could've done better. Are you reflective?

A: Yes.

Q: What kind of reflection thoughts are those? I know you're driving home in

your thinking about things but when he thinking specifically?

A: I think my mind jumps around from one student to another and who knows

what sets it off, but it might be a specific subject or specific behavior or specific

interaction. Probably with three or four different students during the day. I'd be

doing some self-examination, asking myself "was I not patient enough with them"

or "did I try enough" whether it was behavior or academics. I'd probably be

having a few thoughts in there about their home life and whether I was taking that

into account.

Q: But you're generally consciously thinking?

A: I think for the most part. There are days when you're daydreaming a bit, but

for the most part, it works.

Jacki understood the way that she thought and learned, and because of this, she knew that she

had opportunities in her day to reconcile her thoughts and make plans for the next day. She

knew that it worked, and she employed it successfully.

Filtering Her Thoughts

During discussions, Jacki found herself listening to others, and depending on the speaker

and the topic of discussion, being selective about her involvement in the conversations. I

repeated a discussion that she told me and asked her about her thoughts. I asked her:

When teachers were saying, "how can I make them read because they're not

taking their books home?", this put up a lot of walls. Some people were saying

"we have to get them to read at home"; "Maybe we need to get parents to come in

and help". One teacher said there was no one to help in her room, but I said that

some parents were dying to help in my room. When these walls went up, what's

happening with you?

Jacki described a mental filtering mechanism that she seemed to have:

What's happening in me is that I'm controlling my own thoughts. I was thinking

of things that I'd like to say and then measuring whether or not it was appropriate

or if it was going to hurt feelings or if it was worth bringing about. If I felt like

buying into or basically arguing with people, because when the walls are up,

sometimes people aren't very approachable at that time. And I was weighing all

those things in my head probably.

Weighing these thoughts helped Jacki take into account the speaker, their needs, the topic and

the anticipated results. She thought about this to determine whether or not, and when to present

her opinions.

Discussions in the PLC included dialogue around methods and strategy, as above, but

also on the specific goal itself, and the interchange that went on regarding the goals. Being in

such a busy environment, Jacki was surprised that the group focused on the SMART goal, rather

than on other aspects of teaching and learning. Being contemplative, she had theories on this:

Q: Why do you think the math makes sense complaining wasn't coming out and

they were focused on the goal?

A: Because it was one aspect of the program instead of the whole thing. (It's

pretty easy to find a fault somewhere in the program when you're looking at the

whole thing, but it was narrowed down to one.) Maybe it was because it was

something that we chose to focus on, so if they had pick two digit subtraction with trading and everybody was struggling it would have had a different look. Maybe there would have been more complaining coming out if we didn't measure it, but I think it's because we all felt it was kind of an easy thing to improve on. I think we probably almost deliberately picked an easy thing to look at. I don't know why. But it is probably easier to measure and easier to teach, and it was a simple thing to say to the teachers to actively teach the days of the week. Probably because we had choice in which part of the program. It was supposed to be math, but beyond that we could look at whatever we wanted to. It was a group consensus.

Q: You are hoping that in your conversation that you have at your next meeting, which may have already happened, that the conversation around the incident with the grade one /two teacher comes in. You said, "the grade one/two teacher came in and said is today the day that you want parents to read with your children and I said 'no, I'm doing report card assessments', and she said 'how am I supposed to keep this parent busy the whole day?' And I said 'the whole day? I invite them in only for half an hour'." Regarding this conversation, you said you were sure it was going to come up in the PLC. At least that's the kind of thing you were hoping would come up in the next PLC, such as "are you having parents?" and "how is it working to have more parents?" and "I need more and you have too many". You were hoping that sort of thing gets kicked around. What were thinking behind that as you were hoping that idea gets kicked around?

A: I think it would indicate to me that people have at sort of accepted that idea, and that's one way around it. It was in the brainstorm, but I do feel ownership for that idea because I said it initially, so that would be positive feedback to me: People don't hate my idea, at least they're going to try. I would see that as a healthy thing for our PLC, where as if they came back and said, or they were so laid back, I would be starting to think the problem is a little bit more serious. It wasn't just a bad day.

Jacki had an understanding that the type of goal and its concise focus determined whether or not the group could stick to the goal and focus of the PLC meetings. During conversations, she kicked around the idea of throwing in her opinions, and was aware that the only way people could get ideas on how to achieve the goals was to feel comfortable sharing ideas.

Resisters

Within in PLC, dialogue took place as to why students weren't reading as much as they used to. Together, the group decided that they should invite parents as volunteers to read with the children. Jacki mentioned that there were several resisters to accepting the group strategy. This statement led us to the following dialogue:

Q: You said that they were reading in kindergarten, but not so much in grade one and two anymore. You said that with the grade threes, which was last year's grade twos, almost everyone took the book home and brought it back, but the following year, you were asking: *What was the difference? Is it us? And if it is, OK. Or is it the parents? And is it a time problem? Or are they just not*

interested? And if it is, what can we do at school? With these types of questions, what were you thinking when those complaints came up?

A: I was making a conscious effort to reroute this negative feeling. I had the feeling that it was going south and I didn't like that. I didn't like the negativity, and I didn't want to get drawn into this peer pressure, and so I concentrated, consciously thinking about taking the conversation in a different direction, and maybe suggesting some alternatives and trying to be the voice of reason.

Q: Was it taking?

A: Yes, I think it was. Or maybe people were just polite, but people were quiet and waiting and weighing their words, I thought. People seemed open to it.

Q: What were you thinking then?

A: I was probably thinking, "What do they think of me?" I tend to do that. " Do they think I'm stupid?"

Q: But when it started to take; when they didn't ignore you, what were you thinking?

A: I think I felt… not really excited; not that extreme. But I was feeling pleased. Maybe there was hope for the positive side to come through, and maybe we might make a goal that would actually help in the kids by finding a way around that roadblock.

Q: You said that there was a lot of blaming. "It's not us. The kids that are here…" And you said "OK, well that doesn't solve the problem". And you said that once you said that, what happened then was everyone was very quiet. What

were you thinking when people were going away very quiet? What were you
feeling?

A: I would be thinking "are people quiet because they are accepting that idea or
are they quiet because they're annoyed and they don't want to say something that's
going to be offensive to me; Or they're quiet because they're trying to find
another solution." All that was running through my head.

Q: Could you sense rumination? Or was it a wall?

A: Probably from one, and maybe just that particular day, it felt like a wall.
Probably the one that was the most outspoken about it. The one that was most
upset and frustrated by it was someone that I felt the most negativity from and I
didn't know if I was making it or making any positive change.

Q: You said that maybe the whole thing will flop. Maybe, parents won't come,
but that's okay with you, because you're going to try right now anyway. What's
the thinking that's there?

A: You have to try something. I can't just give up. They won't get any better. If
you keep doing the same things you keep giving the same results.

Although Jacki was focused on the goal, she also understood where the resistance came from,
and was compassionate toward others through the changes.

Q: We talked about uncertainty around the scores. I asked if you had a goal
around the reading levels and you said, you think the goal was to get the parents
involved and help us improve our reading scores. It wasn't that specific. I asked
if every member of the group shared the same feelings of uncertainty or are some

members that are more skeptical about the uncertainty. We talked about this being a tall order and last year was a much shorter order. From the reaction quite often, you said, when there's a negative thing you get a defensive mechanism. What are you thinking when you see the reaction to such a tall order? To the uncertainty?

A: I'm thinking I can understand that feeling. Because I do understand that feeling, because I think that I do that myself. I do a lot of self talk about "yes, you are doing this right" or "no, don't be so hard on yourself". I do a lot of that anyway. I feel a sense of disappointment, that people might feel that they miss that chance to see it as a positive mechanism for growth. It's sad, when people shut it down and think it's a personal attack instead of a professional goal or chance to improve.

Jacki's thoughts throughout the dialogue included trying to keep the group acting in a positive, problem solving ways. She sensed resistance, and used her empathy and own metacognition to think through how to approach that resistance, and find solutions. She also anticipated responses and the reasons behind responses, or the lack of responses.

Summary

Jacki recognized the value of setting goals and learning as a group, and it was clear that this process was important to her. Having described her thoughts and feelings including curiosity, fear, excitement, pleasure, and affirmation, she repeatedly showed that she was investing in the PLC.

She described the need for external input, such as structure and direction as premises to success, but she also emphasized a need for all members to become involved and commit to the goals.

Jacki was a methodically reflective member of the PLC team. Through her thinking, it was visible that she was not only internally reflective on her thoughts, discussion, and behaviors, but deliberated over the thoughts of others as well. She thought about how she was teaching, listening, and reaching out to the students. She also had an understanding as to where these thoughts emerged and when they did, such as in the car and on the way home. She was decisive in terms of how she felt she could contribute to the group. She thought that negativity needed to be quashed and that emphasis had to be on the proactive aspect. Despite this negativity; however, she also thought about how others might be thinking, and extended her own self to understand their point of view and the roots of their thoughts. These deliberations contributed to her overall understanding and thinking behind the processes and products of the PLCs in which she was involved.

From Stating to Understanding

Tracey, Lisa, and Jacki shared their stories of working in successful professional learning communities. Tracey found success in asking questions that encouraged thinking. Lisa found success through setting a detailed goal. Jacki found success through encouraging members to collaborate. Each participant shared their thoughts in action and on action, reflectively, and retrospectively to paint three different pictures of what it was like to be a member of a successful professional learning community.

With the accounts described, it was necessary to conduct a second order analysis to arrive at an understanding of the data. My aim in the study was not only to determine what it means to be a member of a successful professional learning community, but to uncover each teacher's metacognitive process as a member of their successful professional learning communities. To do this analysis, the data were studied for themes, so that the essence of what the participants shared could be explained through both their individual uniqueness and their comprehensive representation.

CHAPTER 5

LEVEL 2 DATA: ANALYSIS AND INTERPRETATION

There is a substantial body of literature that identifies metacognition as becoming more and more important in teaching and learning. Much literature is available to support professional development for those educators interested in incorporating metacognitive teaching methods and strategies in schools (Manning & Payne, 1996; Perfect & Schwartz, 2002; Robson, 2006). Hartman (2001) suggested that in order to activate student metacognition, teachers must first be aware of the processes of their own metacognition before they can be effective enough to pass such skills on to their students.

Teachers must foster a metacognitive approach to teaching by using a series of strategies to enable learners to arrive at a way to understand themselves and their thinking (Foster, Sawicki, Schaeffer, & Zelinski, 2002; Manning & Payne, 1996). This approach includes modeling, encouragement, and flexibility. According to Foster et al, metacognition cannot be forced, nor can it be rushed, rather it must be modeled, understood, and encouraged. It must also be discussed in order for individuals to grasp why it is that they think the way they do and how this thinking influences their behavior.

The purpose of this study was to investigate teacher metacognition within the context of successful learning communities. Through the data analysis, I found that four dominant horizons appeared and reappeared throughout the analysis. These four areas center on understanding metacognition itself, the realization of success, the conditions of scholarship epistemology, and the effects of social learning. I will discuss these four areas throughout this

chapter. At this point in the discussion, it is important to reframe what is meant by the term *metacognition*.

Reframing Metacognition

In Chapter 1, I defined metacognition using current literature and practice in the field of teaching. As a result of the interview process, however, I discovered that it is not possible to encapsulate metacognition into a single definition of an act of thinking. The data from this study lead me to believe that metacognition is a process with a time element and is dependent on not only the thinker, but includes and is dependent upon the thinker's environment, position, situation, and experience. This reframing requires a return to and review of the definitions provided in the literature.

At the outset of this research, I defined metacognition according to Flavell (1979), who stated that metacognition is thinking about thinking or the monitoring and regulation of thinking. Flavell divided the tasks of metacognition into knowledge about the person, knowledge about the task, and knowledge about the strategy. It is the combination of these three planes of metacognition that make up one's metacognitive knowledge. Metacognition is the understanding that an individual has about his or her own cognitive processes. Through a review of literature, I found that the definition of metacognition varied somewhat from scholar to scholar.

Most broadly, metacognition has been referred to as an activity that causes members to reconsider what they know and how this knowledge applies to teaching (Sparks, 2005). Metacognition also involves the processes of reflection (on-action and in-action), deconstruction, and reconstruction (Schon, 1995; Mitchell & Sackney, 2000). Metacognition has also been

referred to as those thinking processes that move the thinker beyond the new material being learned to the ways in which this new material is being understood, and why and how it is being understood (Argyris & Schon, 1978). The premise is that if one is aware of how one constructs knowledge, or that knowledge has a constructive nature, they are better able to regulate one's learning as they approach knowledge.

Metacognition has also been referred to as the process that allows for higher level thinking and deep change (Dickmann & Stanford-Blair, 2002; Hatala & Hatala, 2004). Dickmann and Stanford-Blair said that as humans engage in social dialogue, their dissonance and reasoning is stimulated, thus accelerating brain network growth and cognitive rewiring, so much that the person operates at a higher mental plane of functioning. Hatala and Hatala described this higher level thinking as an "awakening of oneself". This awakening involves acting knowingly, which includes the person, the mind, the perception, and the conscious. Duffy (2003) described metacognition as the thinking about thinking, which allows mental models to become malleable and less structured, and allows the person to delve into double loop learning – learning that causes deep change.

Through this investigation, I took a retrospective look at teacher's thinking within the context of successful learning communities as they moved through the experience of being members of their respective successful learning communities. The information gleaned from this phenomenological study suggested that in the context of successful learning communities, metacognition can be characterized as more of a discovery process rather than an act, and that each participant was at a different stage in this process.

I found that although metacognition may develop in individuals, their awareness of it or how it affected their behavior was not necessarily present, even though this metacognition affected their behavior. For these participants, it was generally through the articulation of their thinking processes that members were able to understand the thinking behind their thinking as they moved from recalling their thoughts (description) to thinking about their thinking (process).

I also found that achieving metacognition involved, to a large degree, retrospection, conflict, and discussion. In the context of these successful learning communities, metacognition existed over an elapsed period of time. The thinker moved from recalling his or her thinking toward being able to explain his or her thinking, and toward beginning to understand the processes behind that thinking.

There appeared to be two defining moments through the process of developing metacognition. The first moment was when the teachers thought about their thinking and behaviors, and subsequently modified activities within the learning communities to elicit that similar type of thinking in others. The second moment was the movement toward thinking about their thinking in a deeper way. To varying degrees, each participant exhibited an understanding of their thinking. For Tracey, the understanding was already there. For Lisa, the understanding developed through the learning community process. For Jacki, the understanding was a result of the interview process itself.

Each participant appeared to possess a certain understanding of their own thinking; however, it was subject to their environment and experiences, and it was influenced by the opportunity for reflection and their own awareness of their own thinking.

An Emerging Model of Progressive Metacognition

Based on the reported experiences of the participants in this study and the literature on metacognition, the model of metacognition depicted in Figure 10 is an emerging model of Progressive Metacognition that takes into account relevant literature, such as Dickmann and Sanford-Blair's (2002) work on increasing dissonance and reasoning through social dialogue; Hatala and Hatala's (2004) work on higher level thinking, and Senge's (1990) thoughts on personal mastery. This model depicts that metacognition begins with reflection.
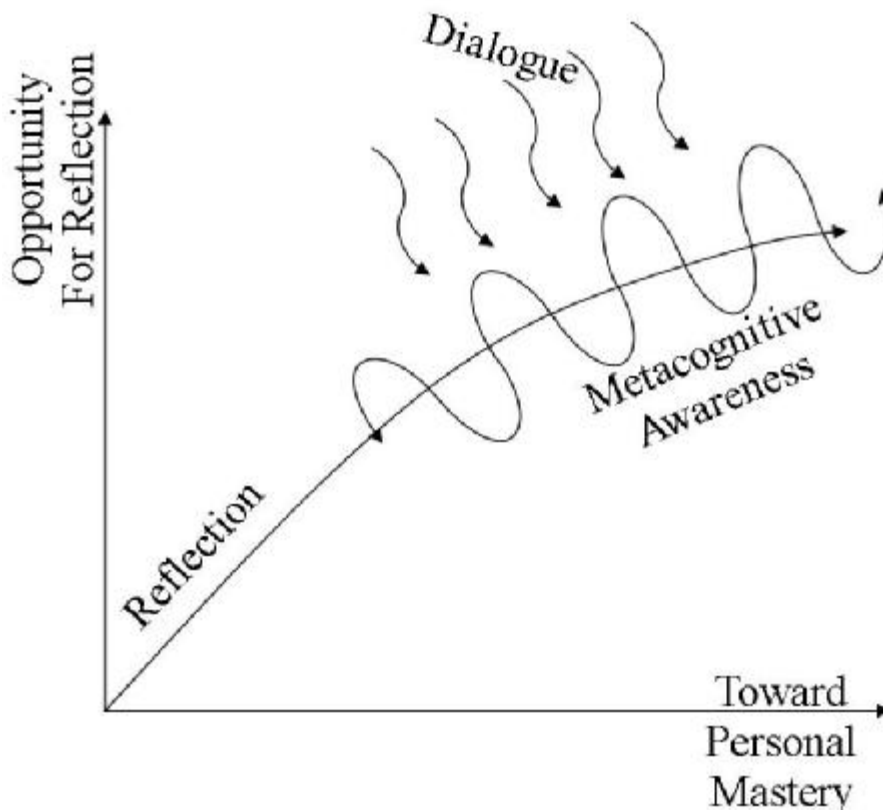
Figure 10. An emerging model of Progressive Metacognition

Through reflection, an individual has the opportunity consider what he or she thinks and what others think. This thinking is then accelerated through *dialogue*, when the individual is called to

give voice to their thoughts. As the thinker experiences more opportunities to dialogue and reflect, he or she is provided with the opportunity to deconstruct and reconstruct what they believe and how they think. If they choose to take this opportunity, they are positioned to become aware of their own metacognition, moving toward personal mastery and setting the stage for accessing unexamined beliefs and increasing awareness of their own thinking.

I also found that, among the participants, there may have been a general lack of awareness of the concept of metacognition as it pertained to their own thinking at the outset of the metacognitive interview, but as the interview progressed (including the time that elapsed beyond the interview), metacognitive awareness progressed. Tracey, in particular, came to an understanding during the second interview that her metacognition influenced the processes within her learning community. Lisa, upon signing the transcript release form for the study, explained how she has been spending a lot of reflection time thinking about her own thinking following the interview and was energized by the study. Jacki commented as we moved through the second interview, that the study was beginning to make sense to her.

This model depicts reflection as the starting point for metacognition. With more frequent opportunities for reflection, one moves toward metacognitive thought. Spurred further by dialogue, one has the opportunity to be frequently metacognitive (sometimes consciously, and sometimes not), as one moves toward personal mastery. This model outlines the opportunity for movement upward and to the right of the quadrant. It is now important to discuss the element of personal mastery as it is used in the model.

Toward Personal Mastery

The processes of reflection, metacognition, and the interview process itself presented each participant with the significant opportunity to come into contact with his or her assumptions about teaching and learning. Through the metacognitive interview process, each participant had the opportunity to articulate his or her thinking about thinking to varying degrees and they took this opportunity to varying degrees.

Initially, the participants were cautious about going into detail about their thinking, but there was a tendency for them to continue recalling events. At the outset, it was difficult to tell if they would be able to move from thinking about their experiences to thinking about their thinking, but as the discussions proceeded and they seemed to establish a comfort level with me, the interview began to evolve to a dialogue "about thinking" rather than simply "thinking about". I imagine that this process of developing trust in their learning communities was similar to the process of developing trust with me.

Tracey had approached the learning community experience with a degree of personal mastery already. She understood her own thought patterns and what she needed or think through in order to resolve creative tensions within her own mind. She used this mastery as a springboard to establish the processes of the PLC for all members, attempting to reaffirm valuable belief and practices, and to change the ones that were ineffective. Through open discussion, Tracey had the benefits of dialogue. The members of her learning community had a voice and an opportunity to express themselves so that they freely could share ideas back and forth. Tracey also took advantage of the benefits of conversation theory. According to Duffy (2003), conversations about a subject, formal or informal, make learning more explicit. As

members of Tracey's PLC discussed information and ideas, members could think about them and compare them with their own knowledge, so that learning could be reinforced, questioned, reconsidered, or dismissed. Tracey created a place where members were invited to talk about their successes and problems. She created a place for problem solving through social dialogue and collaboration. She may have also created a place for members to think about their thinking.

When Lisa described her thinking, she frequently expressed that she was frustrated with some of the other members of the learning community. As the interview progressed, however, she explained that she had an understanding of her own thinking, and the source of her frustrations, stating that she thought that her frustrations came from the fact that the teachers weren't as fluent with curriculum as she was. When this happened, she opened a door to her own understanding. Even though she was frustrated at the time of the event, she changed her thinking to suit the needs of the PLC, providing them with the time and opportunity to explore the curriculum, and allowed her to realize a higher level of success. Senge (1990) termed this change in thinking as arriving at a personal level of mastery. When one can face an underlying belief, realize a tension, and alter that belief, one is in control of one's thinking as one has a new awareness that allows for change in behavior. Had Lisa permitted her beliefs to go unexamined, they would have influenced how she led the group, and she may have been in danger of doing the rest of the members a disservice by not examining her own beliefs; however, this thinking-in-action resulted in Lisa's ability to recognize the members' needs and adjust her own thinking and behavior to meet those needs.

As Jacki explained her thinking behind her thinking, she was expressing a degree of metacognition, although she initially seemed unaware of it. She knew that she needed time to

reflect on her day so that she could consolidate her thoughts and prepare for the next day, and she practiced this reflection on a daily basis as a major influence of the quality of her work. She was already a risk-taker, having come to terms with why things might cause her fear, and how to handle them. She was also aware that the process of the learning community excited her, and brought her to a heightened awareness of what she did in the classroom. She was happy that the group knew how to function and collect data. For the first year, she was not even concerned with what that data were. In her mind, the fact that they arrived at any usable data at all was a success to her. She also used the dialogue in the PLC for affirmation because she understood it as a source of evaluation for her. This feedback loop (Duffy, 2003) helped her professionally, even though this feedback was nothing that she could overtly share with the rest of the group. She used this new awareness to alter the ways in which she needed to approach a task and to improve the strategies and interactions that she had with her students.

Jacki experienced a metacognitive shift through the discussions that her group had when approaching a solution to the students' reading problems. She balked at the idea that the barrier to their learning was that the students did not come to school prepared to learn, and balked at the idea that they were unable to make as many gains as one would expect. She expressed her concern to her group, and this concern was the root of many discussions. Through dialogue, Jacki appeared to be on the road to changing her mental model (Duffy, 2003) around how the students should be reading, and this change was exciting to her. She contradicted herself, however, with her view of a safety net. She said that she would do her best to help the students, but knew that if they failed, their attendance would be looked upon as the reason they failed.

It appeared that Jacki was almost able to change her mental model regarding what a child can learn, but was unwilling to completely let the old ideas go. As Duffy postulated, she may have been resisting complete abandonment of what she already knew. Perhaps this resistance was so that if the goal failed, she had a source of reassurance. Perhaps the resistance was because she heard about the old ideas too often to be able to let them go. Perhaps the resistance was because she was almost ready to let the old thoughts go, but needed to experience the success of her new mental model before creating a new mental model in light of the new information. Duffy said that practices that develop within individuals, such as thinking about thinking, that enable them to loosen old mental models and abandon them for the new. It would be interesting to talk to Jacki in one year to analyze her thinking after her experience with the new strategies.

A Summary of Metacognitive Understanding

Through reframing the definition of metacognition, I have proposed an emerging model of progressive metacognition. This model incorporates the idea that metacognition is a process, rather than an act. It also incorporates the idea that an individual's metacognitive ability evolves over time, influenced by his or her opportunities for reflection, stimulated by dialogue and resulting in an awareness of their own thinking.

This model necessitates an exploration of metacognition as it was present within each participant in this study. Metacognition assumed a characterization within each participant in this study. I have termed these characterizations as *metacognitive fingerprints* because although metacognition itself was apparent within each individual, each characterization assumed its own identity depending on the person's experiences, perspectives and situation. I have created

metacognitive fingerprints to illustrate the variation of metacognition within each participant. The fingerprints are a representation of their metacognitive tendencies, depicting their propensities to engage in certain elements of metacognition. These metacognitive fingerprints can be understood as a 'print' in time, framed only within the period in which the study took place, because each participant was limited to share with me only what they understood at that time. Unlike real fingerprints, the metacognitive understanding will change over time. The fingerprints were not static, rather, those presented here reflect only the information gleaned from the study. As the individuals' experience changes, their level of metacognition will change, thus so will their metacognitive fingerprints.

Metacognitive Fingerprints

Each participant in this study was idiosyncratic in that each one possessed unique metacognitive characterizations. Because this study is situated in the hermeneutical field, I wanted to provide a visual representation of these characteristics. Inspired by the concept of language fingerprints (Moore, 2003), I followed a fingerprinting process in describing the metacognitive characterizations of each participant. Language fingerprints consist of the unique idiolect (combination of words), sociolect (social group make-up) and dialect (accent and grammar of a geographical area) of one's language. Often, a person writes (or speaks) using certain words, in unique combinations and with unique expressions, so that the writer can be identified without a name or face to the work. The patterns and expressions of their language are the identifying attributes.

The creation of the metacognitive fingerprint is much the same idea, and was used in this study to create a visual representation of the participants' metacognitive characterizations.

Listening to the participants tell their stories and explain their thinking, I found that each participant possessed unique metacognitive characterizations. This combination of characteristics both described them, and served as their guide which they used, knowingly or unknowingly, as they progressed through the professional learning community experience. For example, Tracey was aware of her own thinking patterns, therefore, she influenced some of the processes in her learning community to lead others down a similar path. Lisa understood her thinking as well, especially regarding success, therefore she influenced how her learning community would approach their task the second year. Jacki was reflective, and through her influence as a member of her learning community, she often set the stage for others to reflect as well, or expected that members would reconsider ideas once they had the time and space to reflect about certain issues.

Taking the liberty to explore the concept of metacognitive fingerprints, I identified the general elements that characterized each participant's metacognition as reflection, dialogue and metacognitive awareness. I then used the *loop*, the *arch* and the *whorl* of the human fingerprint to relate to the participants' metacognitive characterizations in this study. The idea was that by drawing loops, arches and whorls to represent reflection, dialogue and metacognition, I could create a visual representation of each participant's metacognitive characteristics. Representing dialogue as the fingerprint *arch,* reflection as the fingerprint *loop,* and metacognition as the fingerprint *whorl,* Figure 11 is a snapshot depiction of the metacognitive fingerprints for Tracey, Lisa and Jacki.

Just as a human fingerprint is made up of loops, arches and whorls, and is unique to the human, the metacognitive fingerprint comprises reflection, dialogue and metacognition, and
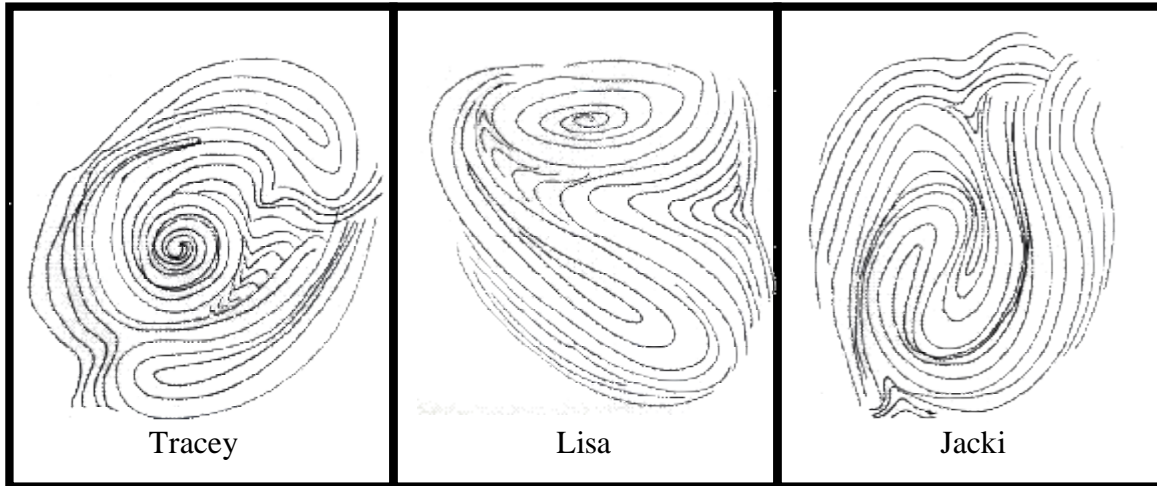
| Tracey | Lisa | Jacki |

Figure 11. The metacognitive fingerprints for Tracey, Lisa and Jacki.

is unique to the thinker. This uniqueness is an attribute of the thoughts, experiences, perceptions, environments and understandings of the individual, thus its make-up would have unlimited permutations. Unlike a human fingerprint, however, both language fingerprints and metacognitive fingerprints are subject to change. Language fingerprints can change as people are exposed to new environments, people and opportunities to learn; while metacognitive fingerprints are subject to change as participants are exposed to opportunities for reflection, dialogue, and learning.

Keeping in mind the above metaphor, with all the limitations that metaphors have, the following descriptions of each participant's metacognitive fingerprint encompass their knowledge, perceptions and experiences. They are my characterizations of each participant, built from their dialogue with me; albeit, are limited to what they have shared and what I understood.

Tracey's Metacognitive Fingerprint

Tracey was aware of her metacognition. It drove many decisions that she made as a leader of her PLC. Because she understood the cognitive processes that she needed to go through in order to perform, she recreated similar processes over and over for her colleagues. These processes consisted of ample time for dialogue and ample opportunity for reflection between meetings. Dialogue was actualized through disagreements, modeling, and risk taking. Reflection occurred during meetings and after meetings, spurred by posing success questions of what was working, what wasn't working, and why it wasn't working. Lastly, her metacognition drove her leadership. It was manifested through her ability to think about what others thought, and her understanding of her own internal conversations and thinking patterns. For these reasons, metacognition (the whorl) was drawn in the centre of her fingerprint as it appeared to have driven her actions. It was supported by the elements that influenced her metacognition – dialogue (the arches) and reflection (the loops).

Because she was aware of her own metacognition as the leader of the PLC, Tracey was in the position to place her fingerprint on the other members of the group, and did so. It was her hope that if they were exposed to the same catalysts that she knew accelerated her own thinking (dialogue and reflection), that they would become metacognitive thinkers themselves. Her thinking included unstated goals, such as learning how to work as a team, learning how to share, learning how to collaborate, but also just learning how to think. Her thinking was that she knew how to get the others thinking but she had not articulated that knowledge for the team.

Tracey used her knowledge of metacognition to influence the processes in her PLC. She knew which processes got her thinking and attempted to recreate these for the members of her

PLC. This was evident in the way she attempted to initiate thought and dialogue among the members of her PLC. She initiated thought and dialogue by asking members her "what was working, what was not working, and why it was not working" mantra, in an effort to create meaningful dialogue. Tracey identified the process of the PLC as successful in that it led to growth, interaction, sharing, and higher level thinking. In describing her thinking behind the processes of the learning community, Tracey knew that perhaps there was not enough time for reflection, but her thinking was that the dialogue (and the conflict) was so important that she was reluctant to change her questions to allow more time for reflection.

Tracey said she knew that working as a PLC would be good for student learning, and her thinking was that discussion (getting the ball rolling) needed to happen for it to be successful. It was only during the interview with me that she was able to articulate why she knew it was successful. She arrived at that conclusion when she was thinking about what caused the success and backtracked from there. She discovered, as she spoke, that the ultimate success for student learning is teacher dialogue. She may have arrived at an understanding of the degree of success on her own, but it appeared that the interview process itself acted as an intervention, perhaps a *metacognitive catalyst*, and provided her with the time and the voice to think about the concept of success more deeply.

Tracey was aware that she had her own mental dialogue as discussions progressed in the learning community. Along with thinking about how their contributions to the discussions would influence her classroom, she knew that she was actively thinking while they spoke, and as the group talked, she assumed that the group also would have similar thoughts. This thinking influenced how she phrased her questions, and influenced how she understood their situations.

She also used her own thinking to influence her responses as people spoke, such as encouraging them to tell their story without judging or being quick to suggesting solutions. Tracey knew that if someone was short in listening to her, she would have shut down, so she was careful not to do that to anyone. She employed a sort of mental filter so that she would encourage the learning process in the learning community. She also knew that in order to encourage them to speak, she had to model speaking among the group herself, because she knew that if they saw her needing assistance, they would be more inclined to admit that they needed help as well.

As the metacognitive interview progressed, Tracey articulated an awareness of her own cognition, when she reported that she knew that the only way for her to solve a problem was to analyze it through thinking about it and voicing it to others. Her awareness of her metacognition had a direct impact on what she attempted to facilitate in her PLC. She confirmed this awareness by saying that she was not sure that everyone thought this way, but she hoped that they did.

Based on these understandings of Tracey's metacognition, I drew her fingerprint with the whorl in the middle. This represented that she was inherently metacognitive, and recognized this within herself. She was also reflective; therefore, I drew two loops. She also employed dialogue as a tool to achieve thinking, thus I included the arch in the fingerprint as well.

Lisa's Metacognitive Fingerprint

Lisa's fingerprint consisted of reflection and dialogue as the drivers of her thinking. For Lisa, metacognition, although not at the centre of the activity for her, was a by-product. She was aware of the power that a successful experience had on changing one's thinking and

practice, therefore did everything to ensure a successful experience for her group. Lisa, however, had to undergo a degree of deconstruction and reconstruction herself as members of her PLC challenged her thinking by not understanding the curriculum at the same level as she did. Having experienced this cognitive change, she was able to bring her PLC to success.

Lisa was not the assigned leader of her PLC; however, Lisa adopted the leadership position because of her experience as a learning assistance teacher, and because she had previously worked with the resource that the PLC chose for their group. Lisa's main concern was achieving success with their goal, and, knowing why the initiative had failed the year before, she was relieved that they had the resource that would lead them to success. She felt comfortable because she had seen the resource work in other settings, so she knew the same resource could work with her group.

Because she was concerned with the PLC's success, she used her own knowledge of success from the previous year to structure the processes of the PLC. This knowledge made up her metacognitive fingerprint. Being aware of her own thinking, she knew that they needed a solid plan. She assumed that if she was comfortable with a solid plan, that they would be as well. Having had cognitive difficulty with a large goal, she led the group to choosing a tighter, more focused goal. She also assumed that the content of the resource would add comfort as it would guide the members through their year.

As the year progressed, Lisa struggled with the member dialogue not fitting her ideal image of PLC dialogue. Although Lisa felt that the members' discussions were meaningful, she was frustrated that the talk wasn't more fluent around curriculum. The questions that they asked one another were, in Lisa's opinion, quite basic, and she would have expected them to be much

more like her own questions. This stretched her understanding of her role and theirs, and it was a mental struggle for her, but she resolved it by thinking about her thinking regarding this frustration. As she deconstructed why their level of questions bothered her, she was able to arrive at the conclusion that her expectations did not match the teachers' current capacities. She then shifted her mindset to accepting that small changes to their questioning or understanding were a positive thing, and concluded that part of this was good, because it forced them to use the curriculum. Although difficult, it was necessary for her to change her fingerprint to allow for the success of the entire process.

Lisa's frustrations also arose from trying to elicit collaboration among members. Her initial thinking was that she had to chase down members to involve them in collaborative teaching exercises. Lisa's thinking changed to include the realization that the members needed to experience the success of collaboration in order for the entire goal to succeed, and that she couldn't chase them. She was aware of her own cognition and that of others when she said that the members could not be forced to collaborate, rather they had to feel the success of collaboration before they would commit to using the strategy. This awareness resulted in her going from classroom to classroom, quietly at first, co-teaching, assisting and participating in ways that would allow others to experience collaboration. She knew that if they felt successful, they would accept the new approach and invite and appreciate opportunities to collaborate. Through her thinking, this collaborative teaching approach became a large part of the PLC.

Lisa found that she also slowed the rate at which she expected the members to adopt the new program and strategies. Although ideally, she hoped that the program would excel right away, but as the year progressed and she changed her thinking, she found herself recognizing the

small steps that the members took. She started to appreciate the small gains. She had to stretch

her beliefs – deconstruct and reconstruct to take in this new knowledge, and be able to better

lead the group to success.

Lisa relegated her cognitive strengths onto the group through assuming that they would

function in similar ways as she did. When they did not, she felt compelled to adjust her

expectations to make everything fit. Through this adjustment, she ensured that the group moved

toward success, and as a by-product of the process, gained an understanding of her own thinking.

Lisa was inherently reflective. She realized that through thinking about problems, she

could arrive at potential solutions. For this reason, I drew the loop as a predominant feature of

her fingerprint. Lisa also believed in the power of dialogue; therefore, the arch is another major

feature of her fingerprint. Throughout the learning community process, however, she began to

understand why she thought the way she did, thus I drew a developing whorl in her fingerprint.

Jacki's Metacognitive Fingerprint

Jacki's metacognitive fingerprint was predominantly made up of two reflection loops,

characterizing her reflective nature. One was the personal reflection regarding her own

performance, and the other was her reflection as part of a learning community. Her fingerprint

was, at the time of the interview, evolving the most. She was developing an awareness of her

own metacognition and felt excited by the interview dialogue.

As a member of her professional learning community, Jacki was not in an ideal position

to create the structure or outline the processes of her learning community, but having

experienced it two years in a row, she quickly developed ideals around what it needed to look

like and how it needed to function in order for it to be successful. These ideals influenced how

she worked as a member of the PLC, her position during discussions, as well as the questions that she asked. She had developed a strong allegiance to the administration of her school during both years, and thought that the success of the PLC would be influenced by the administration's definition, whether or not it matched hers.

Jacki was intrigued by how the PLC operated, and outlined in her mind what she hoped would happen. She was looking for success, whether it was found in student learning outcomes or just in the learning of the PLC members themselves.

Through the learning community experience, Jacki's thinking regarding the learning community process changed. At first she thought the PLCs were just another meeting. After belonging to one, however, she realized the PLC's potential to make her think, and she liked to think. Jacki *learned* about her own thinking. She learned that discussion through the PLC gave her either affirmation that she could not get elsewhere, or food for thought as to how she should change. She learned that the discussions made her think about strategies and classroom instruction. She also learned that the PLC processes kept her focused on goals.

During the interview, she also started to think more deeply in a metacognitive way. Her thinking was that in order for her mind to begin deconstructing and reconstructing, she needed time and space to think, and that the PLC (and our interview) gave her the opportunity to reflect that she needed.

During the PLC discussions, Jacki employed a *mental filter* while she was listening and contributing. Her thinking was that if she articulated every comment that crossed her mind, she would discourage people from speaking up and sharing. Initially, she used this filter to ensure that people would continue to contribute without fear, but over time, and after having developed

an understanding of how the PLC operated, she often chose to share anyway. Her thinking was

that by contributing, she had a chance to influence the members into engaging in deeper

reflection about other solutions.

Jacki was constantly motivated to keep the discussion positive and moving forward.

Resisters to the goal bothered her, and she did as much as she could to avoid any negative

discussion. When someone had limiting thoughts, her thinking was that it would influence

others into being negative. She didn't want such negativity, so she said as much as she could to

keep the process moving ahead in a positive way.

Jacki was predominantly reflective. She knew that reflection time was valuable and

brought about change for her. For this reason, I drew two loops as a central feature of her

metacognitive fingerprint. Jacki also understood how important dialogue was to her professional

learning; therefore, the arch was added to her fingerprint as well.

Summary of the Role of the Metacognitive Fingerprints

My purpose in creating metacognitive fingerprints was to try to illustrate the differences

in the metacognition among participants while still leaving room for growth and change. I

created the fingerprints out of whorls, arches and loops, symbolizing metacognition, dialogue

and reflection. The metacognitive fingerprints summarized both the characterization of each

individual's thinking, as well as a strategy to each of the participant's approaches to the learning

community process. The metacognitive fingerprints also encompassed the participants'

knowledge, and were influenced by their position, and their environment. It is hoped that by my

presenting the metacognitive characterizations in this manner that one may develop an

understanding of the similarities and differences among the participants, as well as the factors which made up and influenced their metacognition.

The Effects of Success

Success influenced teacher metacognition in the context of successful learning communities. Throughout the study, the concept of success existed both as a condition of the perception of the learning community experience, and as a concept that underwent change itself. At the outset of the study, participants were selected by a superintendent, a coordinator, and the principals from learning communities which were perceived to be successful. In the selection criteria, coordinators and principals were asked to: *Please identify at least five learning communities which you deem 'successful' and can identify as "a group of educators who work collaboratively with and learn from one another" (Dufour, Dufour et al., 2005, p. 9) that ultimately brings about tangible or noticeable gains or improvements in student learning.* At the time, this context was due to a hunch that I had that metacognition might exist in learning communities that achieved success.

Through this study, I noticed that success came to play in two major areas, which must be explored further. The first appearance of success was that through the metacognitive interview, the definition of success changed. It did not change from one end of a spectrum to another, rather it changed by expanding. I also noticed that as the participants realized success through their PLCs, success affected their work in the PLCs. It rejuvenated their outlook and encouraged them to re-invest in the learning community process.

Changing Perspectives of Success

During the first interview, each participant identified their initial ideas around success. During the second interview, they were prompted to describe the thinking behind their thinking around success. Although some themes were common across both interviews, it was apparent that the participants' thoughts regarding success changed as they discussed their experiences and their thinking. The definition of success expanded. As the participants recalled their thinking about success throughout the experience, they came to terms with what it really meant to them, rather than what they perhaps were told that it meant. For example, at the outset of the first interview, Tracey mentioned that accomplishing the PLC goal was one of the more important indicators of success for her PLC, but during the second interview, she dissected this thought, and explained that the goal was important, but the dialogue, engagement of members, member thinking, and the ultimate changes in the members ability to teach to the students' needs were critical indicators of success.

Throughout her first interview, Lisa explained that it was very important that her group realized the goal that they set out to achieve. Even after her principal told the group that they learned a lot the first year, she still thought that achieving the goal was the critical sign of success in the second year, and this thought influenced her decision to choose the resource that they would use to guide the PLC in the second year. She thought that a well thought-out plan would practically ensure their success. As the second year progressed, however, Lisa had to change her expectations of the members of her PLC. She realized that their capacities to work with curriculum were different from hers, so her definition of success then changed to include

their learning, investment, and professional development around collaborative and co-teaching strategies.

Jacki recognized that improving student learning was the ultimate goal of the PLC at the outset of the first interview. Her thinking was that if the teachers worked together and dialogued together, they would be more focused and students would learn more. At least they were learning in *her* classroom. By the time she shared her thinking during the second interview, she grew to understand that there were other key elements of the PLC that were indicators of success, such as dialoguing, engaging thinking, and feeling like a team.

Table 2 is a summary of the terms of success that the participants mentioned in each interview. Again, although interesting, it is not important how the definitions changed, because the participants did not have to lose an old definition to propose a new one. They merely expanded their definitions of success, appreciating that not only did success include achieving the student learning outcomes, but it also crossed into multiple areas.

Recognizing success across a number of areas also speaks to the understanding that the participants had about the elements of a successful learning community. Members were inclined to want to achieve the goal, but as the process moved on, there appeared to be a realization that learning to work together, collaborate, and be open to learning were successes in and of their own. In the years that Lisa's and Jacki's group struggled to achieve their goals, these successes seemed to amount to more than what they would have felt by meeting the goal. It leads one to thinking that perhaps, having not struggled, the group may not have learned to work together, and would not be set up for future successes.

Table 2

An indication of the changing definitions of success.

Terms of Success	Participant					
	Tracey		Lisa		Jacki	
	1st Interview	2nd Interview	1st Interview	2nd Interview	1st Interview	2nd Interview
Focused on a goal	x		x	x		x
Collaboration	x	X	x			X
Open to learning	x	x		x		
Improved student learning	x			x	x	
Dialogue	x	x	x			x
Reflection		x	x		x	
Learning to work together			x		x	
Engaged thinking		x		x		x
Invested members		x		x		
Felt like a professional team		x		x		x
Catalyst for thinking		x		x		x
Accomplishing goal	x		x		x	
Change		X		X		

Success and the Spiral

Kemmis and McTaggart (1988) expanded Lewin's (1946) action research spiral to illustrate the cycle of work involved when a group of teachers engage in improvement. Although this spiral is not new, its ideas continue to be current in understanding improvement and change. Many of the key points belonging to the action research spiral parallel that of the professional learning community, such as its collaborative, participatory and reflective nature; its routine and systematic approach; and the collection and analysis of evidence. The spiral describes a series of steps, including (a) planning, (b) action, and (c) the reflection on action,

leading to further repeats of the cycle. Through reflection, members of the group learn both about themselves and about what they need to do to plan for the next loop in the spiral.

The data in this research indicated that the concept of success may play a major, and to date, potentially untapped role in the action research spiral. Participants have indicated that the realization and feeling of success served to fuel their motivation.

Tracey asserted that although the ultimate exhilaration was realizing that they caused an improvement in student learning, she knew that learning to share was success. Learning to explain what was not working was success. Learning to look for answers together was success as well. These achievements influenced how she felt toward her learning community, and affected her motivation as well.

Lisa experienced similar feelings at two milestones of success. The first was when all members finally began to use their resource in the classroom, and the second was when they finally began to incorporate the necessary teaching strategies in their work. These moments energized her. She explained that she knew she had to sit and wait for members to accept the new strategies, but when it finally happened, it increased her desire to press on.

Jacki also experienced cognitive effects from success. She felt invigorated from the success of learning how to collect data. This invigoration stimulated her desire to invest in the learning community. Each small success provided her with a mental energy to learn more.

This research provided understanding behind the importance of adding the element of success to the Action Research Spiral. Success plays a major role in collaborative, reflective action research. It appears to influence the cycle, informing participants that by making small steps to success, they are capable to make the collective big leap toward success and achieve the

goal. This research indicated that the importance of success cannot be understated, and that it is an integral, inseparable part of the action research spiral. Figure 12 represents a revamping of Lewin's (1946) Action Research Spiral, including the term of success. Like the professional learning community, as participants move through the three stages of the action research cycle, they are
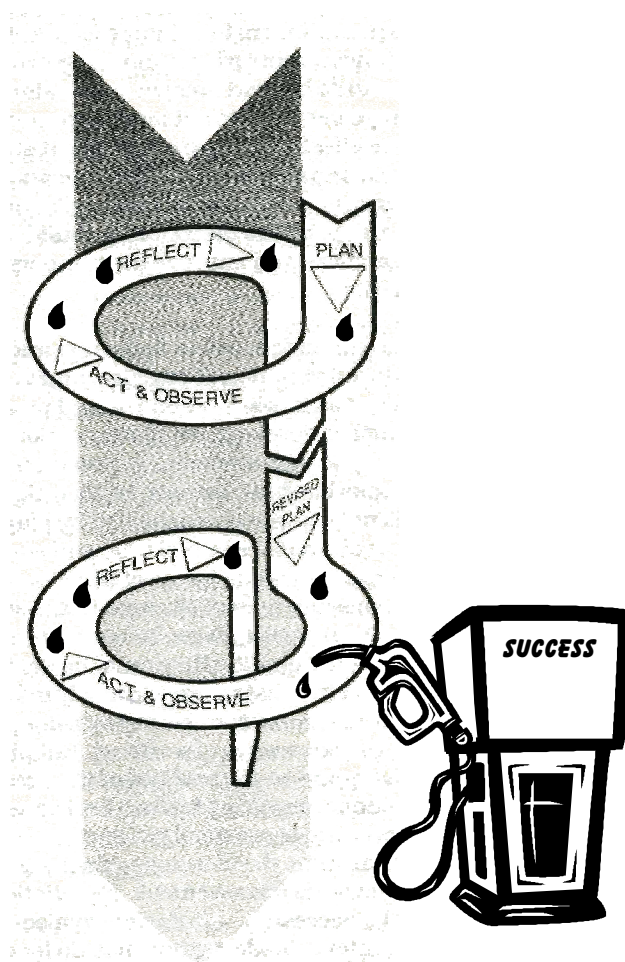
Figure 12. Success and the Action Research Spiral.

rewarded and motivated by successes in each of the areas. Success in planning might include completing a plan, or coming to a consensus or a majority. Successes in acting and observing

might be simply collecting data, learning how to work with a new program, or discovering new strategies. Successes in reflecting might be developing an understanding of the process of action research, or realizing that gains were made. Successes in these smaller areas fuels (and potentially makes possible) their drive to achieve success with the larger goal.

Scholarship Epistemology Revisited

According to Schon (1995), traditional teaching and learning follow an *institutional epistemology*, where knowledge acquisition entails a simple transfer from the teacher to the learner. He said that this epistemology is insufficient, and we require deeper interactions through reflection, discussion, dialogue, and an examination of beliefs. Schon described these types of interactions as *scholarship epistemology*, which consists of greater learning through thinking. Manning and Payne (1996) explained that there are particular conditions which seem to stimulate metacognitive thinking, including (a) very important tasks, (b) challenging situations, and (c) situations of physical or emotional pain. Through investigating teacher metacognition within the context of successful learning communities, I found that the learning community was a catalytic environment for scholarship epistemology. The learning community presented the teacher with two of Manning and Payne's three conditions for stimulating metacognitive thinking, offering them an important task, and a challenging situation.

There are several facets of the learning community that present an opportunity to stimulate members' metacognition. These facets include having a common goal or understanding, the opportunity for reflection, becoming engaged in dialogue, and being held accountable of important and challenging tasks. Also relevant are the effects of having a voice,

and of the *jagged ties* that members had with one another. These ties represent the relationships between people with dissimilar ideas, often forcing each other to rethink their assumptions and ideas.

Through this discussion, I will present the emerging themes of scholarship epistemology and how they exist within the professional learning communities.

Taking Accountability of Important and Challenging Tasks

Each of the professional learning communities in this phenomenological study put forward a formidable task for the teacher. In Tracey's situation, members identified that students' comprehension scores were lower than desired, and they set their goal to improving these scores. Because the problem was identified and highlighted, there was no option to let it go. They were also challenged by the work. The teachers were called to express their mental roadblocks, and were challenged from the outset to overcome them. Having identified the problems, the teachers were challenged to overcome them together.

Lisa's group was also faced with an important task. Having failed in meeting their goal the first year, none of the members of the group wanted to let that happen again. This caused them to be more focused and more driven. They were also challenged. As the year progressed, Lisa realized that they did not have the curriculum understanding that they needed, nor were they familiar with the strategies that they needed to employ to meet their goals. They were challenged to let go of the old and learn these new strategies to meet their needs.

She also felt that they were being held accountable for this work, placing stock in its importance. She knew that if they were not involved in the PLC, they would not be as focused on their goal. Taking this view created, for Tracey and her group, an environment of

accountability and the responsibility that would engage the thinking process, stimulating metacognitive thinking as well.

Jacki's group also faced a difficult task. In their first year, they succeeded with a smaller goal, but in the second year, the goal was more formidable. The group approached the task knowing that something needed to be done, so the stage was set to perform. They also felt challenged because they were not certain that their goal was attainable. They had to try out strategies and see where they could find avenues for success.

Jacki embraced a challenge from the start of the PLC initiative. When she heard that she was being transferred to a school that followed the learning community model, rather than fall subject to the fear of a challenge, she was excited about the new learning. Although initially nervous, she realized that learning new things didn't scare her anymore. She used the fear to challenge her own thinking (Palmer, 1998). Palmer said that fear can make us open to new learning, that it is a healthy fear, and that we must encourage it. Sturner (1987) described this phenomenon as a willingness to dis-associate with the old and re-identify with the new. Jacki was open to the risk and challenge of learning, and flexible enough to meet its expectations. The learning community gave her the opportunity to do so.

Taking Advantage of the Opportunity for Reflection

Schon (1995) determined that scholarship epistemology is different from the simple transmission of knowledge because the opportunity to reflect is prevalent in the learning setting. Reflection-in-action, reflection-on-action, reflection-on-knowing, and reflection-on-practice move the learner from absorbing knowledge to being metacognitive. This type of reflection also

brings about new knowledge, which is constructed through a collection of individuals reflecting on their practices and learning together.

Reflection was a large part of Tracey's practice in her learning community, and without it, she was unsure that she would have reflected on her practice as much because of the business of the job. Although she realized the necessity to reflect on her practice, she realized that the nature of teaching sometimes prevented her from doing that, but the learning community forced it.

Lisa saw a similar trend in her work with her PLC. She noticed that the group changed the way they thought about work. They worked smarter, and with the student learning goals in mind. This reflection has had a positive effect on the work life and practices of the members of her PLC.

Jacki was inherently reflective. She appreciated that reflection was necessary for her to sort out her thoughts, and that most of it occurred on the way home from school. Although Jacki reflected on her own, on her way home from work, she was limited to what she knew, whereas the learning community environment *created the conditions* that Schon (1995) described as necessary to bring about new knowledge. Before the PLC experience, she typically reflected on events from the day, but with the arrival of the learning community, her reflection topics changed and became more focused on the goals and discussions initiated through her PLC.

Becoming Engaged in Dialogue

The learning community provided members with the opportunity for necessary dialogue that brought about reflection and more dialogue. This dialogue and reflection resulted in deeper thinking. Tracey exemplified this facet of scholarship epistemology when she engaged in

reflection that brought about dialogue in her PLC. She recognized that when she encountered a problem in her teaching, she thought, she needed to think about it. Through this thinking, she could arrive at a way to overcome the problem. This seemingly simple act took her mind through the "murky, messy waters" of teaching to reach a greater understanding of herself and her own thinking. According to Schon (1995), teachers don't do this frequently enough, but in Tracey's case, she did it through her learning community. Tracey also offered this opportunity to the other members through the questions that she asked them as a lead-in to discussions. They discussed success in terms of what was working, what was not working, and why it was not working. Addressing these questions forced them to articulate their successes as well as their problems and to analyze them in order to find solutions. Tracey admitted that these activities may have been possible without the learning community, but she doubted it.

Scholarship epistemology brought their thinking to a higher level. Mitchell and Sackney (2000) discussed the value in articulating one's practice in their classrooms. They said that it is difficult to do, but once it is done, it provides a place to deconstruct and reconstruct what one believes, and to move forward. "This provides a powerful metacognitive tool for blending these new insights with prior understandings in such a way as to reconstruct the professional narrative (Mitchell & Sackney, 2000, p. 21). It is a place for higher level thinking.

This type of work belongs in what Sparks (2005) termed the *final two percent*. The final two percent are those few activities that teachers engage in that bring their thinking to a higher level, and create lasting positive change. These activities are absorbing and active and affect not only student learning, but also teacher learning. They also have the potential to transform teacher culture through activities like action research, much like that of a learning community. It

is activities like those in Tracey's PLC that change the thinking of teachers in ways that allow for deep transformation and an improvement in teaching and learning. It is because these activities require that the teachers engage in deep reflection, deconstruction, and reconstruction. These activities also shape culture and energize the people involved.

Tracey's work with her PLC changed the way that they behaved as a group. Rather than simply delivering strategies and materials, members were called to articulate their successes, and discuss their problems. Through these discussions, they were prone to deconstruct and reconstruct their knowledge, opening the door for a new repertoire of strategies and a transformation of practice.

Lisa's PLC was forced, through their own goal setting, to engage in such activities as well. At the outset, the group chose the Write Traits resource as it was straightforward and they felt it had the necessary properties to help them achieve their goal. As they moved through it, though, they found that they couldn't simply adapt their teaching to incorporate it into the classroom, rather they were in line for a deep-set change. They had to learn the cooperative teaching strategy. At first it was difficult, but once the teachers opened their minds to the new strategies and felt successful trying them out, then they adopted the change and contributed to the discussions as to how to move forward.

Lisa's metacognitive fingerprint embodied the idea that once members experienced a positive change, that they would commit to the change process. Lisa's members were challenged, however, because the resource that they were using required that they make a dramatic change to their classroom teaching and adopt a cooperative learning approach. This adoption is identified this as the process of dis-association and re-identification (Sturner, 1987).

This level of dis-association and re-identification may have been quite unsettling for them, because in order to do it, they had to let go of practices that they were used to and try something new. It was with only one area of the curriculum (writing), but it still entailed a certain element of risk. Lisa admitted that this change was difficult for them, but most of them moved past the fear, and were excited by this new learning. In line with Palmer's (1998) thinking, the real learning in this change was not that they learned a new strategy, but that they learned that they could overcome the fear of the new, and move toward being open to real learning.

Lisa's work in her PLC had the potential to transform school culture. By working through a common goal and holding each member accountable, Lisa did not rely on the Write Traits Resource; rather, she waited and hoped that teachers would undertake the strategies that it required. This undertaking was not a simple one, because it affected the teachers' day-to-day practices. Once they took the risk and tried the cooperative teaching strategy, they accepted its success, and wanted to continue to use that strategy. According to Stigler and Heibert (1999), deep-set change such as what Lisa's PLC underwent as it changed not only how the group behaved in specific situations; rather, it influenced the norms and culture of the group.

Lisa knew that the members of her PLC had to change the way they instructed in order for them to succeed with their goal. She knew she couldn't force them, rather she thought that if they experienced success with the new strategies, they would adopt the strategy. This new way, then, would become part of their repertoire as they realized it was feasible and valuable, rather than simply a threat to their sense of stability.

Jacki also found that the reflection and dialogue led to potential positive change. Through talking about one of the larger issues in their PLC, which was getting students to read

more often, and creating a potential solution of inviting parents in, many issues were brought to the forefront, such as concerns about not having enough volunteers, concerns about what the volunteer would do, and concerns that the strategy may not work. Through discussing the concerns, the group decided to try to get more volunteers in, and monitor the outcomes. Mitchell and Sackney (2000) advised that in order for teachers to learn, they have to encourage trust, risk taking and openness to one another in a world where they have traditionally been experts. Jacki developed an appreciation for looking at a situation from the mindset of others, even if it was outside her comfort zone. She incorporated a self-talk which she used to simulate what her administrators may have been thinking or wanting, reflected on what the potential direction would look like for her, and changed her work to accommodate this direction.

Jacki said that she had meaningful conversations with other teachers before the learning community concept came in, but that the PLCs made meaningful conversations a more certain thing. She noticed that it was more formal and more certain. What the creation of the PLC allowed for was a greater certainty that the conversations would take place, and that they'd be about a focused goal.

The Effects of Jagged Ties

Through their theory of socially distributed cognition, Evers and Lakomski (2000) proposed that among a group of learners, people are associated with individuals whom they have similar views (strong ties) and those with whom they have dissimilar views (weak ties). People with strong ties between one another tend to support the same ideas and reaffirm thinking. People with weak ties between one another tend to cause individuals to question their ideas and their thinking, because ideas are not the same. Evers and Lakomski stated that because of weak

ties, learning takes place as individuals listen to another person's point of view that is different from theirs, compare it with their own, and re-evaluate their own thinking. From thinking, comparing ad evaluating, learning takes place.

The participants referred to the fact that their work in each of their learning communities was not free of conflict. Tracey felt conflict in their group when some members resisted new ideas and strategies, such as when the group discussed the subjectivity of using rubrics. They ended up listening to one another, and Tracey admitted that hearing why others didn't like them did cause her to re-evaluate her thoughts. She saw value in others' opinions, but weighed the benefits and the drawbacks and as a result, decided that the rubrics were still indispensable.

Lisa experienced the effect of both strong and weak ties as she attempted to get members to use the cooperative teaching strategy. She found that the strong tie that she had with the Learning Assistance Teacher helped her solidify her convictions. They both discussed the benefits of the strategy and both had similar concerns as to why others were resisting the plan. The weak ties, however, also affected her learning. Lisa assumed that all members were fluent in their knowledge of curriculum, and after experiencing this resistance, she had to consider why they were resisting, and combined with their lack of curriculum fluency, the resistance made sense to Lisa. She had achieved a *negotiation of meaning* (Wenger, 1999), adopting what they said, and altering what she believed. She changed the way she thought and began to accept that the small steps were significant successes, even though they were not what she had initially hoped for. According to Mitchell and Sackney (2000), an educator needs a balance between strong and weak ties to ensure that his or her personal capacity continues to increase. The weak provide them with challenge and spurs thinking. The strong, with affirmation and support.

Jacki also experienced a similar process when her group discussed inviting parents in to help with the reading. One member in the group rejected the idea, and Jacki found herself thinking about whether or not the idea was valuable, and after reassessing the idea, promoted it even more. These members benefited from the strong and weak ties among the members in their group, and as Evers and Lakomski (2000) indicated, the weak ties, the ones between individuals who differ in opinions, created the most reflection, and in these cases, significant learning.

Providing a Voice and Using a Filter

There was dynamism at play in the trust building component in each of the learning communities in this study. Each member of each community was encouraged to voice their concerns, their successes, and their problems. This voice provided them with the necessary avenue to articulate their thoughts. Having had a difficult experience in a previous school by sharing something and having another teacher intimidated her, Tracey knew that members would most likely not be initially comfortable giving voice to their concerns. To accommodate this fear, Tracey modeled this process for them, describing problems that she was having in her own classroom. Following her sharing, she listened as the group made suggestions, being sure to remain open to their ideas and involvement.

Having voice also gave the PLC members the avenues through which they could access help. Tracey acknowledged that there was nowhere else that she could receive the help that emerged from the combined experience spanning decades of teaching and learning. With the input from all members, the PLC members could combine their knowledge, discuss it, adapt it and arrive at new solutions because they worked together. Tracey experienced what Evers and Lakomski (2000) termed *socially distributed cognition*. She knew that she had a better

opportunity to create new knowledge if she was to deconstruct and reconstruct with other members, expanding exponentially on their individual knowledge and on their collective knowledge.

Through this process, however, Tracey employed a filter for both what she said, and what she was prepared to accept. Through this filter, she refrained from saying things that may have come across as evaluative, judgmental, or superior. She refrained so that members would feel safe discussing their problems. She also used a filter for what she took in. Although members suggested different ideas and strategies for her, mentally, she sorted through them and decided what was plausible and what was not for her own situation, and through reflection, chose what she perceived as the best course of action. Tracey assumed that others followed the same procedure as she sis as well, which generated norms that were open, trusting and safe.

Lisa also employed filters. Although she was initially impatient with some of the members' reluctance to adopt the resource, she refrained from sharing comments in the PLC that would exude a negative feeling. She knew that she had to wait and hope that the program would be effective. She used a filter, again, for what she heard. At first, she didn't want to accept that some of the members were not fluent with curriculum, but as time went on, she realized that she had to work with their skill level if the goal was to succeed. She began to accept small gains as success, and became pleased with them. She was then elated when the entire membership adopted the program.

Jacki practiced employing filters as well, however as she engaged a filter, she thought about the other member's input, weighed her thoughts, and anticipated the results of sharing her thoughts. She then assessed whether or not it was worth sharing her thoughts, especially if there

was a risk of upsetting the speaker. If she thought it would benefit the students, however, she opted to share her thoughts, anyway.

The above description outlined the elements of scholarship epistemology, and how they affect the individual teacher's thinking. The professional learning community, however, exists in a context of social learning. I now examine the theory of social learning.

Metacognition, Scholarship Epistemology, and the Theory of Social Learning

The theory of social learning is relevant to this study of teacher metacognition in successful learning communities. Thinking is stimulated in social learning situations as information is shared, discussed, reflected upon, and results in learning (Dickmann and Sanford-Blair, 2002), either consciously or sub-consciously, and with or without conflict. Similar to conversation theory, learning takes place and is either reinforced, questioned, or dismissed because knowledge is made explicit and is discussed in relation to an important topic (Duffy, 2003). In the context of a learning community, the theory of situated learning (Lave, 1988) also comes into play, as members share ideas with each other and may often share tacit knowledge, through doing and modeling. This learning takes place in situ, learning as they do, not solely as they say.

Evers and Lakomski (2000), in their theory of socially distributed cognition, illustrated that knowledge takes shape beyond the person: it emerges among the people. Extending the pattern of learning in the brain to social learning, as knowledge moves from person to person, it is considered, reinforced, assessed or rejected, and it changes the thinking of the people involved. Such a process keeps the members learning and allows for continued thought and creativity. As Palmer (1998) indicated, when people work with one another, and leave room for others' input,

people increase their capacity to learn, which carries forward the mission of lifelong learning. The theory of socially distributed cognition entails a simple arrangement of people as nodes and goals as inputs. This arrangement cements the opportunities to learn, as new knowledge grows between and among the people as thinking is made explicit, experiences are shared, and new ideas are discussed. Figure 13 represents an adaptation of Evers' and Lakomski's (2000) model of the theory of socially distributed cognition, previously discussed in the literature review. As knowledge enters the group as an input, it moves from individual to individual, and is distributed among members, discussed, and assessed. Evers and Lakomski suggested that from this process,
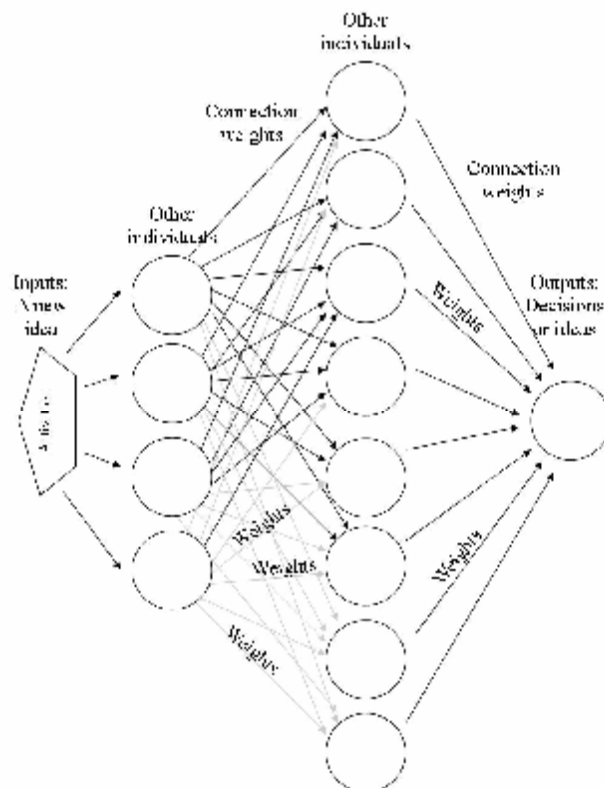
Figure 13. Artificial neural network model used to depict socially distributed cognition.

the output (the decision) that is made has the potential to be a better decision than without the socially distributed cognition process because the knowledge was shared, discussed, and more experience from several people was involved in the final output.

From this study, I learned that the learning community environment played an important role as an effective environment both for stimulating teacher metacognition and for studying teacher metacognition, and from this knowledge, I can add a little more to Evers and Lakomski's (2000) model of socially distributed cognition. I learned that the environment, the culture, and the members of the PLCs themselves were all interdependent as factors that influenced learning. The norms of the PLC, the expectations of the administration, the personalities of the members, the needs of the students, the realization of successes, and the separate environments that surrounded each participant acted together to affect each individual's learning.

Stamps (1998) emphasized that these elements are interdependent, thus creating the environment for learning. Being unable to reduce these elements to only one or two in the context of school, one has to consider all conditions to be aware of the potential for learning within a specific learning community environment. I also learned that from this phenomenological study that the participants, within their environments, used reflection and dialogue as the main vehicles for their learning, and these vehicles influenced their metacognition. These participants were also influenced by their definitions of success, and achieving that success along the way. Figure 14 is a model derived from this study, illustrating these vehicles interacting and interrelated with learning and metacognition around an important

goal or task, but also affected by their environment. This simple model, however, once transposed onto Evers and Lakomski's (2000) model of socially distributed cognition, paints a much more detailed picture of the elements at work in a professional learning community.
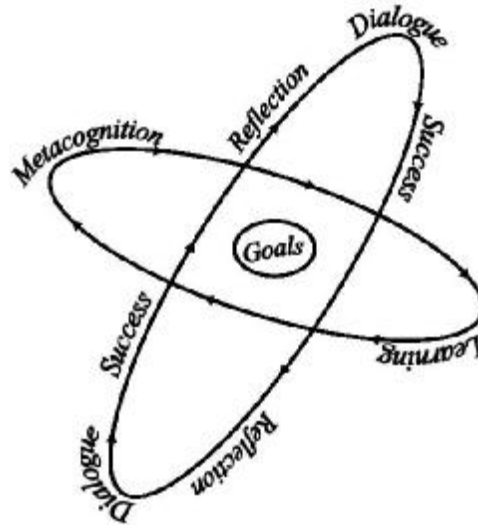
Figure 14. The interdependent elements influencing metacognition.

Although complex and multi-faceted, it depicts how knowledge has the potential to not only be distributed among members of a group, but how it can be reflected upon, compared, discussed, and changed as in moves through the group. Figure 15 is the model of socially distributed cognition adapted to depict learning and metacognition within a successful learning community.

Through this model, it can be understood that as learning enters the group through a member (with their own learnings and metacognition), that, member employs dialogue and discusses it with others. As the others speak, the information that they share affects the thinking of the original speaker and the thinking of those around them. The idea continues to move to other members, and affects their learning as well. The results may be many, such as a change in the thinking or the learning of individual members, an increase in student learning outcomes, the

creation or adoption of better strategies, or the achievement of goals. This model is an

adaptation of the Evers and Lakomski model, but includes the metacognition and learning of

individuals as they affect the movement and quality of information.
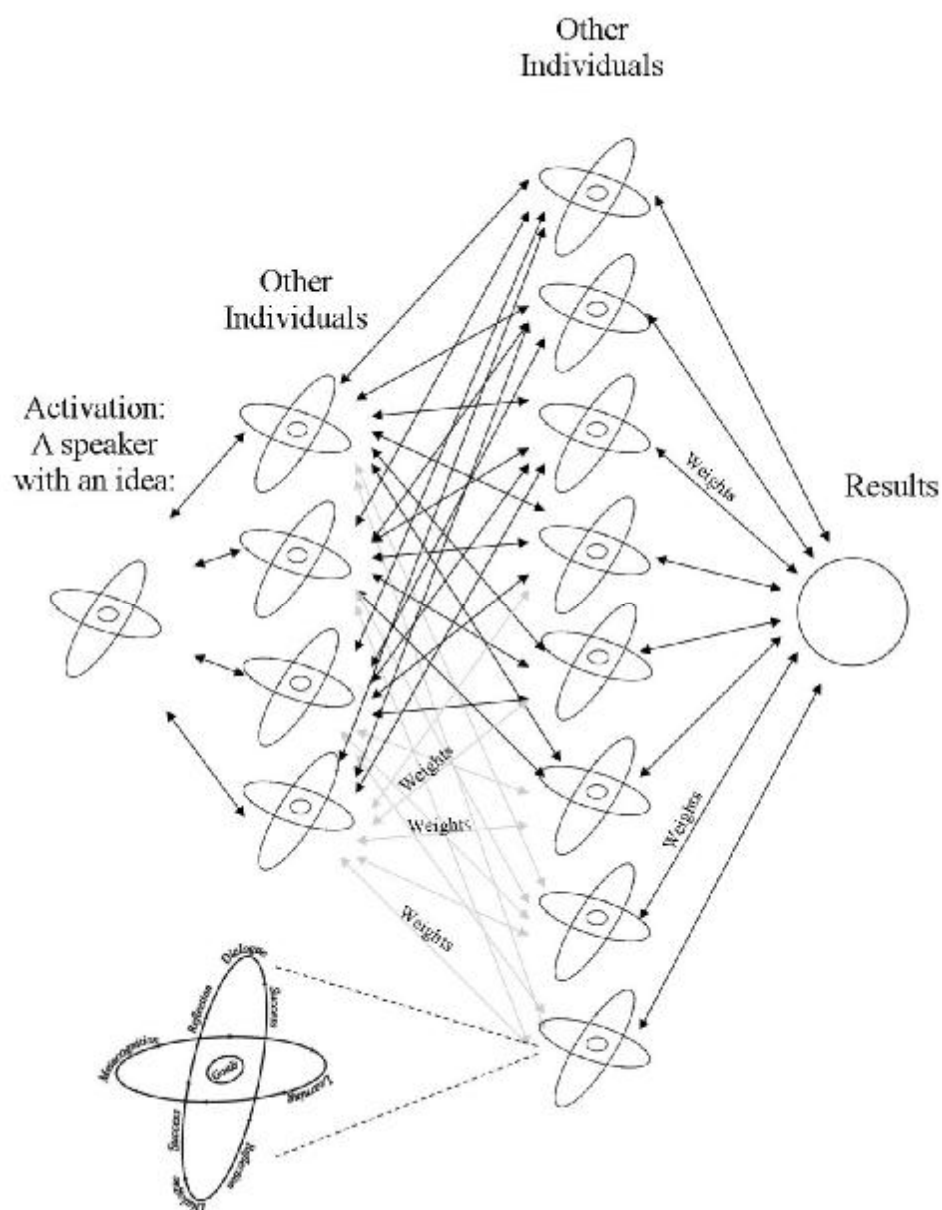
Figure 15. An adapted model of socially distributed cognition to depict metacognition

This model is not free of limitations. For example, it is plausible that the model is less linear and more cyclical, or perhaps has little structure, and is free flowing. The model also does not include individuals who choose to remain uninvolved. Despite these shortcomings, it serves as an extension of existing theory in explaining socially distributed cognition as an exchange of live and ever changing information and learning.

Summary

This phenomenological study of metacognition within the context of successful learning communities yielded two sets of data. The first set was presented as level 1 data, and included accounts of the participants' experiences as well as the thinking behind their thinking. The second set of data was treated as level 2 data, and resulted in the following four learnings:

1. A reframing of metacognition to include an emerging model of Progressive Metacognition, to suggest that metacognition occurs over time and is influenced by reflection and dialogue, which ultimately leads to a higher degree of personal awareness. This examination of metacognition also resulted in the creation of metacognitive fingerprints for each participant.

2. An understanding of a duality of effects of success through the context of the successful learning community. The first effect was that the participants' definition of success changed and expanded as they talked about their experiences within the learning community. The second was that small gains or successes contributed significant motivation to the members as they worked through the learning community process. These facets of success contributed to a reframing of the Action Research Spiral to include success as it affected planning, action, and reflection.

3. An understanding of the inherent relationship between scholarship epistemology and success in the learning community process. Activities that were perceived as important and challenging provided a suitable environment for stimulating metacognition. This environment contained many parallels to that of a learning community.

4. An appreciation for the relevance of the theory of social learning to the learning community process. The movement of knowledge among these successful learning community members paralleled the movement of knowledge recognized in social learning theories. This study suggests that the interdependent elements influencing learning and metacognition need to be considered in social learning theory.

CHAPTER 6

CONCLUSIONS

This study was a phenomenological investigation of teacher metacognition within the context of successful learning communities. I began the study by identifying successful learning communities, and then identifying members of the learning communities that would perceive the learning community as successful. I conducted two interviews with each participant. During the first interview, I collected their experiences as members of successful learning communities. I then horizonalized the data to uncover areas where thinking may have taken place. The purpose of the second interview, the metacognitive interview, I investigated the thinking behind the thinking. The findings are a result of in-depth interviews, and thus may contribute to the current knowledge base on metacognition, as well as provide an in-depth understanding about the processes of metacognition through these three teachers in their successful learning communities. The limitations of this qualitative study included the limits to its generalizability. The participants in this phenomenological study could share their thinking from their entire experience; however, the findings were limited to what the participants were able recall and were comfortable to share.

I present the findings here through the four overarching themes, each of which contain implications for theory, research, and practice.

Overview of the Findings

The data from this study revealed four overarching themes that have implications for teacher metacognition within successful learning communities. The first theme lies in the reframing of the concept of metacognition itself as a process. The metacognitive fingerprints of

each participant were framed as both characterizations and strategic approaches. The second identified theme relates to the perception and realization of success among the members of professional learning communities. I also identified that the conditions of the professional learning communities manifested scholarship epistemology, which facilitated metacognition. Lastly, I found that metacognition was influenced by the conditions of social learning present in the learning community environment. Within each of these four areas, I present the implications for theory, research, and practice as they relate to the respective findings.

Understanding Metacognition

Following the data analysis, it was necessary to reframe the term metacognition. Pre-existing definitions of metacognition were multi-faceted, and varied from a simpler level of reflection toward a higher level of developing personal mastery. This study, however, identified that metacognition took the appearance of a long-term process rather than a short-term action. The creation of the theoretical model of Progressive Metacognition allowed for the depiction of the elements that affect metacognition, and their contribution to personal mastery.

Through the process of creating metacognitive fingerprints for each participant, I was able to express that the fingerprints were both characterizations of and approaches to the learning community process. Each participant was unique. Each participant's learning community experience was unique. Therefore, their metacognition was also unique.

It would be interesting to conduct further research using the model of Progressive Metacognition or an adaptation of the model to determine the degree to which reflection and dialogue affect metacognition, and/or the metacognitive fingerprint. Perhaps research into levels of metacognition or metacognitive change in professional environments may provide information

as to how to elicit metacognition and learning among teachers, so that they can increase their learning and effectively pass on these strategies to their students. I also found that the interview itself became an intervention tool for metacognition. Further research could be conducted to determine to what degree conversations and dialogue affect metacognition.

A third implication for research is that although this study was a snapshot in time, the reflection time between the interviews allowed the participants to think about the why and how behind their answers. Through the time and spacing of the interviews, participants were able to provide deeper contexts and detail to questions, thus changing their level of understanding of themselves and their thinking. Perhaps research on the effect of reflection time might inform researchers attempting to conduct studies requiring metacognitive interviewing. Lastly, through the understanding that the participants possessed metacognitive fingerprints that were both characterizations and strategies for their work, administrators may use this knowledge to influence professional learning community structures.

From this study, it was apparent that personal cognition spearheaded personal change and school improvement. In practice, it is necessary for school leaders to consider the role of reflection, dialogue, and metacognition, as educators seek effective processes of organizational change and improvement.

The Role of Success

This research revealed that the participants' perceptions of success through the learning community experience were integral to the thinking that took place. I found that success had a major impact in motivating the participants. As the interviews progressed, the participants expressed that success had multiple definitions, and their perceptions of success in these learning

communities influenced their professional drive and their learning. The recognition that learning to work together, learning to collaborate, and learning to be open to one another became a large part of their perspectives regarding success.

In theory, the findings provided an interesting perspective on Lewin's (1946) Action Research Spiral, in highlighting the implication that along with the cycle of planning, action, and reflection, success has significant positive effects on learning and improvement. The key points of the action research model have many parallels to the professional learning community model. As it continues to be relevant to today's school improvement initiatives, the addition of the motivational power of success adds a dynamic force to the elements at work in action research and other collaborative group work.

Although this study was not intended to determine the impact of success on the learning community, I found that success had a significant impact on the momentum throughout the learning community experience. It would be valuable to research the impact of celebrating success as part of such collaborative professional initiatives.

It would be interesting to conduct a longitudinal study to observe the effects of the professional learning community on a teacher's thinking over a longer period of time. The long-term study would make it possible to explore the effects of different kinds of improvement on the thinking of teachers and their metacognitive development.

In practice, this research implies that when carrying out action research, leaders of school improvement must plan, act, observe, and reflect. They must also consider the powerful and motivating effects of the realization of success, and help PLC members recognize and celebrate successes at every opportunity.

Conditions for Scholarship Epistemology

Greater learning through thinking was the underpinning of most of the activities in the successful learning communities, leading to the understanding that the successful learning community epitomized scholarship epistemology. The literature suggested that providing members with important tasks and challenging situations leads to engaged thinking and it stimulates cognition. The data from this study suggested that there are many more elements that interdependently stimulate metacognition, such as a common goal, reflection time and space, opportunities for dialogue, strong and weak ties, and accountability. Although these catalysts were evident throughout the study, the degrees to which each influenced scholarship epistemology was neither sought nor determined at this point.

It would be valuable to conduct research on the effectiveness of each of the catalysts on stimulating thinking and metacognition. Perhaps it is possible to determine which catalysts or combinations of catalysts have a larger influence on metacognition, or which types of tasks stimulate professional metacognition.

In practice, this knowledge would create the opportunity for leaders to match teachers with the types of tasks that stimulate teachers' higher level thinking, and orient social workplace arrangements to facilitate dialogue, reflection, and encounters with strong and weak ties. It may also provide understanding of the elements at work in a professional learning community, and how to better manage conditions for member thinking and reflection.

Relevance for Social Learning Theory

This study provided an interesting connection to Evers and Lakomski's (2000) theory of socially distributed cognition. From this study, one understands that knowledge is constructive,

and that it parallels the fact that knowledge exists between individuals, and that this knowledge grows as individuals interact with each other. It also affirmed that strong ties between individuals affirm knowledge, but that weak ties contribute to knowledge creation.

The adaptation to the model of socially distributed cognition proposed that rather than viewing individuals as nodes that simply transmit knowledge, they must be viewed as dialoguing, reflecting, learning individuals that interact with the knowledge, and that they perceive success, further influencing their learning and metacognition.

This study suggested that the successful learning community process is an effective vehicle for not only the transmission of knowledge, but for the construction and growth of this knowledge. The successful learning community embodies a culture of reflection and dialogue. It also presents members with important tasks, challenging work, and an environment of accountability, which create the conditions that stimulate metacognition.

This study also adds to the growing body of knowledge management theory. As organizations strive to compete in our knowledge society, there is pressure to keep track of accumulating knowledge as employees move in and out of positions. The successful learning community may be an effective tool for knowledge management as it provides all members with a voice, and as it allows for knowledge to be quickly dispersed among members. It also presents a valuable tool for the creation of new knowledge, and for its sustainability or improvement through reflection, deconstruction, and reconstruction.

It appears that the elements of a successful learning community create the conditions in which metacognition takes place. It would be valuable to investigate other contexts in which

metacognition takes place. Perhaps by identifying those catalysts that nurture deep learning, one would arrive at greater knowledge of how to create such environments.

Methodological Reflections

This study was an investigation of teacher metacognition within the context of successful learning communities. Being that it was an exploratory study in metacognition, I found that I underwent a process of metacognition myself. The following is a discussion on my own metacognitive processes as I conducted this investigation.

I wanted to investigate teacher metacognition, but I needed to look for it in an environment that was conducive to thinking and learning. Theory suggested that when individuals work in a learning community, they have the opportunity to collaborate, they encounter strong and weak ties forcing them to think, and they work together to achieve a common goal (Dufour, Eaker, & Dufour, 2005; Mitchell & Sackney, 2000). Because of this theory, I thought it may be a place to start the investigation of teacher metacognition, but I was not sure that metacognition would be found.

These individuals were engaged in the process of metacognition to varying degrees beginning with reflection to becoming aware of their own metacognition. I also found that their metacognition was evolving as the learning community process continued, so that it was a dynamic, changing part of their professional knowledge. Some of this change happened while they went through the learning community process, some of it happened in the time period between the two interviews, and some of it happened while we engaged in the interview process. This change alarmed me at first, but then I realized that it was a necessary part of metacognition.

I also found that the learning community exemplified scholarship epistemology within an environment that stimulated metacognition, such as providing members with important tasks, challenging situations, and accountability. I realized that the conditions of scholarship epistemology influenced the metacognition that took place.

The pilot study conducted before the initial interviews helped me because it provided me with training in asking the initial questions to uncover the experiences, as well as to practice horizonalization in preparation for the second interview. I found that after the pilot, I expected that the process would uncover thinking about thinking. In hindsight, however, at times I felt as though I should have conducted a thorough analysis of the data from both pilot interviews, because this may have helped me hone my questions for the actual research interviews. At other times, however, I think that analyzing the pilot interview data would have been a mistake, because it may have distorted my thoughts around the data and clouded my thoughts as to what the findings may have been. Analyzing the pilot data may have also prevented the data and findings from taking their own shape. As it was, because of this sort of disciplined naiveté regarding where the data would take me, I was more confident that the phenomenological study was as true to the participants' accounts as possible.

Data collection was carried out following Moustakas' (1994) phenomenological research model. I used a hermeneutical approach to collect participants' phenomenological experiences through an initial interview prompting the participants to talk about their experience as part of their successful learning community. This story provided me with the opportunity to conduct a horizonalization process to uncover situations or events where participants' thinking may have been more prominent. This stage allowed me to see the text in terms of isolating key moments.

Following this horizonalization process, I involved each participant in a second interview, to prompt them to recall what they were thinking at key moments during the learning community experience.

Using phenomenological data collection, horizonalization and reduction as part of the data collection methodology appeared to be effective. Participants were given the opportunity to share their experiences. I shared this first order analysis in the first part of chapter four. The horizonalization process afforded me the opportunity to conduct the second, in-depth interview, while continuing to "return to the experience in order to obtain comprehensive descriptions that provide the basis for a reflective structural analysis that portrays the essences of the experience" (Moustakas, 1994, p. 13). Without this horizonalization process, I may have approached the second interview with too many questions, and the interview would have been less effective. As the second interview progressed, I was able to continue to return to the original data, to help engage the participant in thinking about their thinking at those key moments. Horizonalization helped me stay on topic, but its loose structure allowed the participants to share freely.

During the data analysis stage, I became confused with a section of one of the participant's transcripts. In answering questions, she often spoke in the present tense, and this influenced how I interpreted the data. For example, if I asked her what she was thinking at a certain time during the learning community process, she responded, "I'm thinking…" and would finish the thought. Because I was investigating metacognition, and some of this metacognition happened during the learning community process, some of it happened during the lapse between the two interviews, and some of it happened during the interviews, themselves, I needed clarification as to when the thinking took place. When I called this participant about my

confusion, she said that her thinking took place during the learning community process, but she spoke that way because during the interview, she was mentally visualizing herself there at the time, and was thoroughly explaining her thinking. Had I not called her for clarification, I may have misrepresented her thinking.

Presenting the data proved to be challenging, as I wanted to stay as true to the source as possible, while still interpreting it to draw meaning from it. I believe that the presentation and analysis that I chose was successful as it met both needs. Data from the interviews were presented in Chapter Four so that they could be read as they were told, while the second order analysis provided in Chapter Five allowed for the interpretation and structuring of the phenomena.

Through the study, I also found that, along with the learning community experience, the interview process itself was an intervention in aiding the participants in understanding their own metacognition. At first, I was concerned when I saw intervention effect in the data, but as I continued to reflect on the process, the intervention was not preventable. It actually took my own understanding further in terms of the effects of reflection and dialogue on metacognition. Like the learning community processes itself, the interview prompted the participants' thinking, the reflection time, and space, and the opportunity to talk out their thoughts, and since the second interview was spaced apart about two weeks from the first, participants had time to think about what they had said, and it influenced their understandings of self.

As I was working through the data and collecting the findings, I was intrigued by the fact that the participants had such unique facets to their metacognition. These idiosyncrasies spurred me to represent their metacognitive fingerprints. This process was a difficult mental exercise for

me, since I was reluctant to place any member on a continuum. I also felt that the model didn't include enough information, and that it needed to perhaps be three dimensional, so that it could include the environments in which the participants were working (the other members, the roles that the teachers were taking, and the like).

This problem resulted in my decision to represent such characterization as the metacognitive fingerprints. Inspired by the concept of *language fingerprints* (recognizing who wrote a piece of literature by the style of writing), I believed that fingerprinting the metacognitive characteristics of each participant would aid in our understanding of where they were at the time. I enjoyed classifying the whorls, arches, and loops as metacognition, dialogue, and reflection, and didn't hesitate in using this system as a way to represent the thinkers.

These metacognitive fingerprints prompted my thinking about my own fingerprint, and I found that my own metacognition was affected through this process. I found that I was asking myself when I thought things through, how I thought, and why; and I came to certain conclusions around my own understanding. Looking at Flavell's (1979) categories of metacognition, I found that I had strong knowledge of myself as a thinker; and that at work, I use this knowledge to influence what I do and what I expect of others. I wonder about the impact that this study has had on my metacognitive fingerprint and my degree of awareness of self.

I learned a great deal through the processes involved in this study. Along with having developed a greater understanding about teacher metacognition within the context of professional learning communities, I learned a few lessons about teachers and about research.

I learned that these three teachers were generally humble about taking credit for gains that took place in a collaborative setting. Even though they were responsible for many of the

successes, they were modest in taking the credit, and they attributed it to the collective in the group rather than to themselves. I also learned that the participants were initially reluctant to discuss metacognition, perhaps because as members of a profession, they rarely discussed such thoughts and thinking about thinking. Perhaps it was because they were unaware of the impact of such thinking, or perhaps it was because they initially had to feel comfortable with me before talking about it. In any case, through the course of the interview, they managed to find a place for it. By the end of the interview, they enjoyed it, and when I spoke to them afterward, they were intrigued by the effect it had on them and were looking forward to learning more about metacognition.

I learned that metacognitive interviewing is an exhausting process for both the participant and the researcher. One hour seemed to be the limit that both of us could manage. Waiting for a week or two in between each interview appeared to be an adequate wait period to begin again. The busy work life of teachers, time issues, and exhaustion combined to create limitations to the number of times that I could ask them to meet. Thus, the times we did meet resulted in an exhausting but worthwhile experience.

Although the findings are not generalizable, I, as an administrator, have already put these learnings into practice. For next year, I have arranged to have interns, new teachers, and veteran teachers in PLCs, focused on our learning improvement plan goals for the year. I am creating more meeting times for them, and I have combined like thinking and un-like thinking teachers in the groups. I hope that this combination takes advantage of the strong and weak ties and the dialogue time. I look forward to rereading this work in a year, and reviewing the results of my

work in the school, and reflecting and dialoguing about the successes of our learning community experiences.

Concluding Comments

This study provided information about teacher metacognition within the context of professional learning communities. Using a phenomenological methodology, I encouraged the participants to relay their experiences as members of successful learning communities. Following this initial data collection, I conducted second interviews to uncover the metacognition, or the thinking behind the thinking, during key moments of their experiences.

I reframed metacognition to include an emerging model of Progressive Metacognition, indicating that reflection and dialogue have a large impact on one's metacognition and metacognitive awareness. One's metacognitive characteristics change over time as individuals experience opportunities to increase them. The participants in this study possessed metacognitive fingerprints composed of metacognition (whorls), dialogue (arches), and reflection (loops). The fingerprints represented both characteristics and strategies of participants for approaching the work in their successful learning communities. This metacognitive fingerprint was a representation of the cognitive tendencies of each individual, and it evolved as individuals experienced the opportunity for reflection and dialogue.

The interview process itself proved to be an intervention that aided the participants in accessing their thinking, and understanding their own metacognition.

At the outset of the interviews, the participants' perceptions of success were narrow, and for the most part, included student learning outcomes. As the participants worked through their reflections and dialogued about their learning communities, their perceptions of success

expanded to include smaller successes en route to achieving the learning community goals. Success was also found to be a motivator for the participants through their work in their learning communities. Because of its impact, I incorporated it into Lewin's (1946) Action Research Spiral as it impacts the way collaborative groups plan, act, and reflect during action research, such as practiced in the learning community.

Scholarship epistemology existed behind the activities within the successful learning communities. Metacognition and learning took place because through the learning community, individuals were provided with important tasks and challenging work. Many elements of the professional learning community also acted as catalysts to higher level thinking, thus making the PLC an exemplary model for supporting scholarship epistemology as well.

An individual's reflection, dialogue, and success acted interdependently around a common goal to influence an individual's learning and metacognition. These interdependent elements, when added to Evers' and Lakomski's (2000) model of socially distributed cognition, provided a richer understanding of the dynamics affecting knowledge and learning in social learning situations. This finding also contributed to the theory of socially distributed cognition, adding that not only are members involved in the dispersion of knowledge, but also in its creation and change as it moves through the social learning network.

Questions for Continuing Dialogue

As much as information was gleaned from this study, the findings left me with questions as to the nature of metacognition, learning communities, and social learning. These questions can also be taken as propositions that may not necessarily be researched, but that may be taken as themes for dialogue among interested parties exploring the concept of teacher metacognition.

1. From the participants' retelling of their experiences, they mentioned the necessity of feeling a level of trust with one another. At the same time, I also noticed that as the participants in this study became comfortable with my presence, they became more comfortable to share their thoughts with me. What part does trust play in the development of metacognition?

2. Through the process of horizonalization, I noticed that critical incidents in which participants seemed to have deeper thoughts seemed to involve situations where unlike minds met, or conflict was present. To what degree is the necessity of weak ties in the development of metacognition?

3. The context of the learning community presents participants with an important task and a significant challenge, as well as an environment that promotes reflection and dialogue. In what other contexts does metacognition thrive in the teaching and learning environment?

4. At one point in her discussion, Lisa explained that she had to change her mental model around effective teaching in order to be an effective leader of her PLC. Is metacognition a vehicle for offsetting groupthink, where members avoid promoting viewpoints outside the comfort zone of consensus (Janis, 1972)?

5. As the research progressed and the second interview (the metacognitive interview) was underway, I realized that the interview itself prompted metacognitive thinking. How can research and practice be influenced by the knowledge that the metacognitive interview was an intervention in stimulating metacognition?

6. Through the altering of the model of Socially Distributed Cognition, I arrived at a greater understanding of the factors at play in a learning community, or in a community of social

learning. What degree does this new contribution to socially distributed cognition alter the shape of a theory of socially distributed cognition?

7. The context of the learning community created an environment for scholarship epistemology. In what other ways can scholarship epistemology be facilitated?

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APPENDIX A

Ethics Application

Letter for Permission to Access - Sample

Introductory Letter – Sample

Informed Consent Form for Participation

Consent Form for Data Transcription Release

Behavioural Research Ethics Board (Beh-REB)

APPLICATION FOR APPROVAL OF RESEARCH PROTOCOL

1. **Name of researcher(s)**
   Dr. Patrick Renihan   Supervisor, Educational Administration

1a. **Name of student(s)**
   Michelle Prytula   Ph.D. Study, Educational Administration

1b. **Anticipated start date of the research study (phase) and the expected completion date of the study (phase).**
   Anticipated Start Date: January, 2008
   Anticipated Completion Date: October, 2008

2. **Title of Study**
   Scholarship Epistemology: An Exploratory Study of Teacher Metacognition within the Context of Successful Learning Communities

3. **Abstract (100-250 words)**
   The purpose of this study is to investigate teacher metacognition within the context of successful learning communities. This study will take a retrospective look at individual teacher experiences and will be conducted in four main phases. The first phase will be to identify successful learning communities, the second will be to identify the teachers within those successful learning communities, the third phase will be to uncover their stories, and the fourth will be to have them dig deeper into their thoughts in order for them to describe, explain and understand their own thought processes throughout the experience.
   The metacognitive nature of the study makes it not possible to set out pre-formatted research questions, however, using the model as a basis, and seeking out the *how* along with the *what* as the individual participants tell their stories will lay the foundation for the study. Further investigating and questioning for the *how* as they re-examine their statements and thoughts will provide the opportunity for the collection of rich data for further analysis.

4. **Funding**
   This study will be self-funded.

5. **Conflict of Interest**
   There is no anticipated conflict of interest in this study.

6. **Participants**
   Participants will be selected using a purposive sampling method. Superintendents and coordinators of one school division will be contacted and requested to identify and nominate successful learning communities based on reputational criteria. They will be asked to identify

several cases of successful learning communities, identified as "a group of educators who work collaboratively with and learn from one another" (Dufour, Dufour et al., 2005, p. 9) that ultimately brings about tangible or noticeable gains or improvements in student learning. Superintendents and coordinators will also be asked to identify individuals within the successful learning community with the following attributes: 1) certified classroom teacher with at least five years teaching experience; 2) member of a learning community perceived as successful; 3) member of a learning community who may perceive the learning community as successful. From those nominated, the three selected participants would be verified according to the above criteria through initial participant recruiting letters and initial stages of the research.

7. **Recruitment**
   Recruitment Material is included in Appendix A.

   - invitation to participate
   - nomination criteria
   - superintendent nomination form

8. **Consent**
   The consent form is included in Appendix B.

9. **Methods/Procedures**
   This is a qualitative study and is phenomenological in nature. Data will be collected from each participant through an initial story of the participant's experience as a member of a successful learning community. This data will be recorded and transcribed. Following this, further interviews will follow for the purpose of breaking the stories into parts. The metacognitive nature of the study makes it impossible to set out pre-formatted research questions, however, "(r)ather than approaching measurement with the idea of constructing a fixed instrument or set of questions, qualitative researchers choose to allow the questions to emerge and change as one becomes familiar with the study content" (Krauss, 2005, p. 760). Seeking out the *how* along with the *what* as the individual participants tell their stories will lay the foundation for the study. Further investigating and questioning for the *how* as they re-examine their statements and thoughts will provide the opportunity for the collection of rich data for further analysis. Sturner's (1987) model on the steps in the change process will be used as a backbone to this fourth stage. Although the exact stories that the participants will share are unknown, it is anticipated that Sturner's model will be useful in metacognitively exploring the thoughts and perceptions that the individuals experienced. Questions such as "What were you thinking at the beckoning stage?"; or "How did you understand that their was a questioning inside your mind?"

10. **Storage of Data**
    Upon completion of the study, all data (digital tapes, electronic, and paper) will be securely stored and retained by Dr. Patrick Renihan, Department of Educational Administration in the College of Education in accordance with the guidelines defined by the University of Saskatchewan. The data will be placed in a locked cabinet for a minimum of five years. The

data will be stored for five years after completion of the study. After this time, the data will be destroyed.

11.   **Dissemination of Results**
Results from this project will potentially be used for scientific publications and presentations to professionals, policy makers and educators. Results of the study may also be used in a book or other publishable format. The stories will be written using pseudonyms, the stories will be fictionalized in such a manner that third parties and locations cannot be identified.

12.   **Risk, Benefits, and Deception**
No deception is involved in this study. Participants will not be exposed to harm, discomforts, or perceived harm.
There is one potential risk. It is possible that one or more of the participants will share negative information (e.g., about the lack of support of his/her colleagues, school administrator, or school division) which could put both the teacher (if anyone finds out who the teacher is) and the third party (if anyone finds out where the teacher actually does work) at risk. The participants will be warned about this possibility during the individual phone interview. However, the names or locations are not of interest to the study, therefore, they will be changed to protect the participants. The participants will also be able to change their transcripts if they think, in hindsight, that the information they shared could compromise their anonymity or their careers.

a) Are you planning to study a vulnerable population? This would include, for example, people who are in a state of emotional distress, who are physically ill, who have recently experienced a traumatic event, or who have been recruited into the study because they have previously experienced a severe emotional trauma, such as abuse. NO
b) Are you planning to study a captive or dependent population, such as children or prisoners? NO
c) Is there is an institutional/ power relationship between researcher and participant (e.g., employer/employee, teacher/student, counsellor/client)? NO
d) Will it be possible to associate specific information in your data file with specific participants? NO
e) Is there a possibility that third parties may be exposed to loss of confidentiality/ anonymity? NO (see above)
f) Are you using audio or videotaping? YES. Participants will be audio-recorded, but recordings will be heard only by the researcher and by the transcriber, who is separate from the school division. Transcriptions will be returned to participants for their review to edit or delete sections as they choose. Participants will be asked if they think there is any information that will identify them to those in their school or school division, and if they do find any, this information will be deleted or changed. Participants will be asked to sign a transcript release form.
g) Will participants be actively deceived or misled? NO
h) Are the research procedures likely to cause any degree of discomfort, fatigue, or stress? NO
i) Do you plan to ask participants questions that are personal or sensitive? Are there questions that might be upsetting to the respondent? NO

j) Are the procedures likely to induce embarrassment, humiliation, lowered self-esteem, guilt, conflict, anger, distress, or any other negative emotional state? NO
k) Is there any social risk (e.g., possible loss of status, privacy or reputation)? NO
l) Will the research infringe on the rights of participants by, for example, withholding beneficial treatment in control groups, restricting access to education or treatment? NO
m) Will participants receive compensation of any type? Is the degree of compensation sufficient to act as a coercion to participate? NO
n) Can you think of any other possible harm that participants might experience as a result of participating in this study? NO

13.   Confidentiality

All participants will be assigned pseudonyms. Locations and other identifying information will be fictionalized. The total number of teachers involved will be 3. As the pool of possible teachers involved is fairly large, identification of one teacher is unlikely. A transcript release form will be required from each participant.

14.   Data/Transcript Release

Because it is possible that the anonymity of participants may be compromised through direct quotes, participants will be provided with the opportunity to withdraw their responses after their interview and prior to the publication of the findings. Participants will be asked to review the final transcript and sign a transcript release form wherein they acknowledge by that the transcript accurately reflects what they said or intended to say.

15.   Debriefing and feedback

Participants are provided with information on how the researcher can be contacted if they have questions or concerns in the letter of information describing the study they received. A brief executive summary of the project will be provided to each of the participants upon request.

16.   Required Signatures

_____   _____   _____

Michelle Prytula   Dr. Patrick Renihan   Dr. Sheila Carr-Stewart
Student   Supervisor   Department Head
343 Skeena Crescent   Educational Administration   Educational Administration
Saskatoon, SK   College of Education   College of Education
S7K 4G9   University of Saskatchewan   University of Saskatchewan
(306) 242-5973   28 Campus Drive   28 Campus Drive
mprytula@scs.sk.ca   Saskatoon, SK   Saskatoon, SK
                          S7N 0X1   S7N 0X1
                          (306) 966-7620   (306) 966-7611
                          pat.renihan@usask.ca   sheila.carr-stewart@usask.ca

Letter for Permission to Access Sample

Dear Director;

Thank you for considering this request to allow me to conduct my research titled Scholarship Epistemology: An Exploratory Study of Teacher Metacognition within the Context of Successful Learning Communities. The purpose of this study is to take a retrospective look at individual teacher experiences in order investigate teacher metacognition within the context of successful learning communities.

I am seeking to conduct in-depth case studies with three teachers in this school division who perceive themselves as having had experience in a successful learning community. I will ask superintendents or coordinators to assist me in identifying at least ten successful learning communities, and at least one teacher in each who meet the selection criteria attached. Following brief pre-interview questions with each identified teacher, I will choose three willing participants for the study. I anticipate that these three participants would be involved in several in-depth interviews throughout the study.

I will take great care to ensure that the privacy and confidentiality of all participants will be preserved using pseudonyms, and will only ask them to participate on a voluntary basis. I will also be as unobtrusive as possible, and will ask each teacher to participate on their own time and at their convenience. All interviews will be semi-structured and recorded. Participants will be made aware of the purpose of the study, and will have the option of withdrawing from the study if they choose.

Each participant will also be provided with a copy of their data and transcripts, as well as a copy of the results of the study. The results will be used for my doctoral dissertations, and may later be published in a scholarly journal, used for a presentation or at a conference.

I ask your cooperation by allowing me access to these individuals by confirming and signing this form, and, if possible, endorsing/supporting my study to the superintendents and teachers involved. Thank you for your support!

_____   _____   _____

Michelle Prytula   Director of Education   Date
Researcher
University of Saskatchewan

Introductory Letter - Sample

[Insert Date]

Dear Participant:

My name is Michelle Prytula, and I am a Ph.D. candidate with the Department of Educational Administration at the University of Saskatchewan. My study is titled ***Scholarship Epistemology: An Exploratory Study of Teacher Metacognition within the Context of Successful Learning Communities.***

The purpose of the study is to investigate teacher metacognition within the context of successful learning communities. This study will take a retrospective look at individual teacher experiences and will be conducted in four main phases. The first phase will be to identify successful learning communities, the second will be to identify the teachers within those successful learning communities, the third phase will be to uncover the teachers' stories, and the fourth will be to have the teachers dig deeper into their thoughts in order for them to describe, explain and understand their own thought processes throughout the experience. Specifically, the aim of this study is to find out how teachers think as they experience successful learning communities.

As a case study participant I will be contacting you initially to ask you questions about your involvement in a learning community. In a semi-structured interview format, I will ask you to share a story and some experiences that you have had through your involvement with the learning community. I will then contact you at a later date to ask you questions about what you already shared with me, to learn more from your experiences. The goal is to determine what your thoughts and thought processes were as you were involved in the successful learning community. Each interview will last approximately 1 hour.

This research will provide valuable information for literature, theory and practice regarding the thought processes of teachers in successful learning communities, for policy makers in the creation of professional development, as well as in the expectations and role of the teacher.

The information gathered from teachers who participate in this study will be used for presentations at conferences, professional venues, and scientific publications. The taped interviews will be transcribed verbatim. You will be asked to sign a transcript release form. Data resulting from the interviews will be examined for themes. Direct quotations may be used but the majority of the case study results will be reported as aggregated (composite) case studies.

Your cooperation in Scholarship Epistemology: An Exploratory Study of Teacher Metacognition within the Context of Successful Learning Communities would be greatly appreciated. If you are interested in participating, please read and sign the consent form.

If you have any questions or concerns about this study, I can be contacted by e-mail at mprytula@scs.sk.ca or by phone (659-7311). Thank you, in advance, for your consideration and cooperation in participating in this study.

Respectfully yours,
Michelle Prytula, Ph.D. Candidate
University of Saskatchewa

Informed Consent Form for Participation

You are invited to participate in the first phase of a study entitled ***Scholarship Epistemology: An Exploratory Study of Teacher Metacognition within the Context of Successful Learning Communities.*** Please read this form carefully, and feel free to ask any questions you might have.

Researcher(s):

Patrick Renihan, Ph.D.   University of Saskatchewan   306-966-7620

Michelle Prytula   University of Saskatchewan, Ph.D. Candidate

Purpose: The purpose of the study is to investigate teacher metacognition within the context of successful learning communities. This study will take a retrospective look at individual teacher experiences and will be conducted in four main phases. The first phase will be to identify successful learning communities, the second will be to identify the teachers within those successful learning communities, the third phase will be to uncover the teachers' stories, and the fourth will be to have the teachers dig deeper into their thoughts in order for them to describe, explain and understand their own thought processes throughout the experience. Specifically, the aim of this study is to find out how teachers think as they experience successful learning communities.

Potential Risks: All participants will be assigned pseudonyms. As the pool of possible teachers involved is fairly large, identification of one teacher is unlikely. However, because it is possible that the anonymity of participants may be compromised through direct quotes, participants will be provided with the opportunity to withdraw their responses after their interview and prior to the publication of the findings. Participants will be asked to review the final transcript and sign a transcript release form wherein they acknowledge by that the transcript accurately reflects what they said or intended to say.

Potential Benefits: This research will provide valuable information for literature, theory and practice regarding the thought processes of teachers in successful learning communities, for policy makers in the creation of professional development, as well as in the expectations and role of the teacher.
The information gathered from teachers who participate in this study will be used for presentations at conferences, professional venues, and scientific publications. The taped interviews will be transcribed verbatim. You will be asked to sign a transcript release form. Data resulting from the interviews will be examined for themes.

Storage of Data: Upon completion of the study, all data (digital tapes, electronic, and paper) will be securely stored and retained by Dr. Patrick Renihan in accordance with the guidelines defined by the University of Saskatchewan. The data will be stored for five years after completion of the study. After this time, the data will be destroyed.

Confidentiality: All names and locations will be given pseudonyms in this study. Participants will be asked to sign a transcript release form. Data resulting from the interviews will be examined for themes. Direct quotations may be used as supports to the themes, however, pseudonyms will be used in the quotes as well.

Right to Withdraw: Your participation is voluntary, and you may withdraw from the study for any reason, at any time, without penalty of any sort. If you withdraw from the study at any time, any data that you have contributed will be destroyed at your request. Throughout the study you will be asked to complete additional consent forms for each of the case study participant contacts. As researchers, we will advise you, the participant, of any new information that may have a bearing on your decision to participate.

Questions: If you have any questions concerning the study, please feel free to ask at any point; you are also free to contact the researchers at the numbers provided above if you have questions at a later time. This study has been approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board on (insert date). Any questions regarding your rights as a participant may be addressed to that committee through the Ethics Office (966-2084). Out of town participants may call collect. A brief executive summary of the project will be provided to participants upon request.

Consent to Participate: I have read and understood the description provided above; I have been provided with an opportunity to ask questions and my questions have been answered satisfactorily. I consent to participate in the first phase of the study described above, understanding that I may withdraw this consent at any time. A copy of this consent form has been given to me for my records.

_____   _____
(Name of Participant)   (Date)

_____   _____
(Signature of Participant)   (Signature of Researcher)

Please provide the phone number you wish to be contacted at: _____

Consent Form for Data Transcription Release

Study Title: Scholarship Epistemology: An Exploratory Study of Teacher Metacognition within the Context of Successful Learning Communities

I am returning the transcripts of your audio-recorded interviews and a copy of the social network diagram for your perusal.

I _____, have reviewed the complete transcript and charts of my personal interviews in this study, and have been provided with the opportunity to add, alter, and delete information from them as appropriate. I acknowledge that the transcript and charts accurately reflect what I said in my personal interviews with Michelle Prytula. I hereby authorize the release of the transcript and diagram to Michelle Prytula to be used in the manner described in the consent form. I have received a copy of this Data Transcript Release Form for my own records.

_____   _____

Participant Signature   Date

_____   _____

Researcher Signature   Date

UNIVERSITY OF SASKATCHEWAN

Behavioural Research Ethics Board (Beh-REB)

Certificate of Approval

PRINCIPAL INVESTIGATOR Patrick Renihan	**DEPARTMENT** Educational Administration	**BEH#** 07-283

INSTITUTION(S) WHERE RESEARCH WILL BE CONDUCTED (STUDY SITE)
University of Saskatchewan
Saskatoon SK

STUDENT RESEARCHERS
Michelle Prytula

SPONSOR
UNFUNDED

TITLE
Scholarship Epistemology: A Study of Teacher Metacognition within the Context of Successful Learning Communities

APPROVAL DATE 09-Jan-2008	**EXPIRY DATE** 08-Jan-2009	**APPROVAL OF:** Ethics Application Consent Protocol

CERTIFICATION

The University of Saskatchewan Behavioural Research Ethics Board has reviewed the above-named research project. The proposal was found to be acceptable on ethical grounds. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this research project, and for ensuring that the authorized research is carried out according the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.
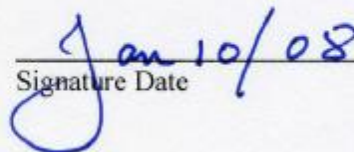
Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.

ONGOING REVIEW REQUIREMENTS

In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month of the current expiry date each year the study remains open, and upon study completion. Please refer to the following website for further instructions: *http://www.usask.ca/research/ethical.shtml*

_____
John Rigby, Chair
University of Saskatchewan
Behavioural Research Ethics Board

_____
Signature Date   Jan 10/08

Please send all correspondence to:

Ethics Office
University of Saskatchewan
Room 306 Kirk Hall, 117 Science Place
Saskatoon SK S7N 5C8

APPENDIX B

Selection Tools

Interview Tools

Superintendent/Coordinator Selection Letter - Sample

Dear Superintendent and/or Coordinator;

Thank you for agreeing to participate in this initial phase in identifying successful learning communities and individuals within the successful learning communities. The purpose of this study is to investigate teacher metacognition within the context of successful learning communities. This study will take a retrospective look at individual teacher experiences and will be conducted in four main phases. The first phase will be to identify successful learning communities, the second will be to identify the teachers within those successful learning communities, the third phase will be to uncover the teachers' stories, and the fourth will be to have the teachers dig deeper into their thoughts in order for them to describe, explain and understand their own thought processes throughout the experience. Specifically, the aim of this study is to find out how teachers think as they experience successful learning communities.

I am seeking to conduct in-depth case studies with three teachers in this school division who perceive themselves as having had experience in a successful learning community. For this purpose, I am asking you to assist me in identifying at least ten successful learning communities, and at least one teacher in each who meet the selection criteria attached. Following brief pre-interview questions with each identified teacher, I will choose three willing participants for the study. I anticipate that these three participants would be involved in several in-depth interviews throughout the study.

I will take great care to ensure that the privacy and confidentiality of all participants will be preserved using pseudonyms, and will only ask them to participate on a voluntary basis. I will also be as unobtrusive as possible, and will ask each teacher to participate on their own time and at their convenience. All interviews will be semi-structured and recorded. Participants will be made aware of the purpose of the study, and will have the option of withdrawing from the study if they choose.

Each participant will also be provided with a copy of their data and transcripts, as well as a copy of the results of the study. The results will be used for my doctoral dissertations, and may later be published in a scholarly journal, used for a presentation or at a conference.

I ask your cooperation by completing the attached form to the best of your knowledge. Thank you for your support!

_____
Michelle Prytula
Researcher
University of Saskatchewan

Scholarship Epistemology: An Exploratory Study of Teacher Metacognition within the Context of Successful Learning Communities

Nomination Criteria

Please identify at least five learning communities which you deem 'successful' and can identify as "a group of educators who work collaboratively with and learn from one another" (Dufour, Dufour et al., 2005, p. 9) that ultimately brings about tangible or noticeable gains or improvements in student learning.

AND

Within this list, please identify at least two individuals from each successful learning community that you listed above that exhibit the following attributes:

1) certified classroom teacher with at least five years teaching experience;

2) member of a learning community perceived as successful;

3) member of a learning community who may perceive the learning community as successful.

**Scholarship Epistemology: An Exploratory Study of Teacher Metacognition
within the Context of Successful Learning Communities**
Superintendent/Coordinator Nomination Form

Learning Community Nominations:

School	Learning Community Description	Indicators of Success

Individual Members according to selection criteria:

School	Name	Indicators of Success

**Scholarship Epistemology: An Exploratory Study of Teacher Metacognition
within the Context of Successful Learning Communities**

Selection Interview Questions

Teacher's Name: _____

1. What is your understanding of the term *successful* in the context of a successful learning

community?

2. In what ways or circumstances did you see the learning community (that you were involved
in) as successful?

3. Why did you see it as successful?

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Personal Story Semi-Structured Interview Questions

Teacher's Name: _____

Let's have a look at the PLC.

Tell me about how it came about.

　　　What was its original focus? Purpose?

　　　What were your hopes/expectations for the PLC?

　　　What processes did it follow (meetings, activities, venues etc.)?

　　　How would you describe the culture of the PLC?

　　　How were you involved?

　　　How were others involved?

　　　How did you act as a professional learning community?

　　　Did it change over time?

　　　How did the PLC affect work in the school? Classrooms?

　　　Who benefited from the professional learning community and how?

　　　Did you celebrate successes? How?

　　　What words (or other words) would describe your experience in the PLC?

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Thinking About the PLC Semi-Structured Interview Questions **(Phase Four)**

Teacher's Name: _____

Note: These questions are for structure only. They will be constructed according to what the participant shares in the third phase – the story semi-structured interview.

I'm interested in your thinking in the context of the successful professional learning community. What was your thinking / your thoughts at different times / places?

Focus: How did the focus engage you?
Expectations: Why did you expect it? How did you come to get those expectations?
Communication: Why did people communicate that way?
Activities: What were you thinking as you did the activities? Which made you think more? Which affected you? How did they affect you?
Role: What were you thinking in your role? How did that affect you?
Others: What did you think as the others were involved?
Culture: What were you thinking as the culture of the PLC took shape?
Leaders / Resisters: Why did these roles evolve? What were you thinking as this happened?
Decision Making: What were you thinking when decisions were made? Why did you make decisions? What were you thinking before/as/after you made them?
Affect on Work and Role: What did you think about the effect on you? What were you thinking as it took effect?
Realizing Success: What were you thinking as you noticed it was working? How did that affect you?
Outcomes: What were you thinking as you realized outcomes? Why did you get those outcomes? Why do you think those successes were realized?
Words: Why do you choose those words for success? What have you thought about the success? How has it affected you?