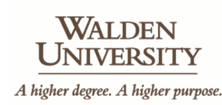

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Becca Lindahl

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Walden University
2011

Abstract

Research-Based Characteristics of

Professional Learning Communities at the

High School Level

by

Rebecca Lindahl

MSE, Drake University, 1990

BA, French; BS, English, Iowa State University, 1980

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Administrator Leadership for Teaching and Learning

Walden University

February 2011

Abstract

An educational problem facing high schools in 2 Midwestern school districts is that few local contextual experiences exist for developing professional learning communities that contain research-based characteristics. Identifying such experiences is important to school leaders and teachers. The purpose of this study was to examine 2 local high school professional learning communities to identify research-based characteristics such as practice-based discussions and a focus on learning and results. Constructivism and social change theory provided the theoretical foundation. A single research question sought the presence of research-based characteristics. The characteristics formed the conceptual framework and emerged from many voices in the field. Qualitative case study research methods guided the study; each high school served as a case. Interviews with 10 educators, observations of 4 team meetings, and examination of artifacts from the sites were conducted to collect data. Data analysis included coding information from interviews, meetings, and artifacts; developing individual case narratives; and constructing a cross-case analysis. A key finding was that all research-based characteristics were present in each school. One conclusion reached was that strong administrative leadership contributed positively to the presence of characteristics. Another was that operating from a learning model (e.g., AIW [Authentic Intellectual Work] or DuFour) contributed positively as well. Several recommendations are included and focus on following a model under strong administrative leadership. Given the findings, positive implications for social change include more effective teaching, more authentic collaboration in schools, and a culture of teacher excellence.

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Dedication

This study is dedicated to Mark and Joe. As a family, we've taught each other in different ways what it means to learn.

Acknowledgments

If I have personally learned anything from this study, it is the importance of teaming and community. There are many who contributed to that community, many who cheered me on. Thank you to Mark and Joe for supporting me in words and actions and to many other family members and friends for great questions and interest in my work. Thanks to my place of employment, a place that challenges employees to be learners at every step of every endeavor we undertake. Thank you, work friends and colleagues, for listening, for reading, for providing feedback, and for moral support during this long-term effort. Finally, to my committee members: Thank you, Dr. Sharon Canipe and Dr. Richard Penny, for your leadership and guidance throughout the months of data gathering, analysis, writing, writing, and more writing. Dr. Canipe, you especially were a rock for me through your strong, long-term support and clear-headed thinking.

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Section 1: Introduction to the Study

Background of the Study

Teachers and administrators in my Midwestern state have begun to realize that professional learning communities in high schools can offer advantages compared with traditional structural models. Two local high schools in different districts have been at the forefront of developing professional learning communities; in 2007, these two schools took different approaches to create their own communities. Now that each school has had time to continue to develop its professional learning community, there is a need to look for research-based characteristics. The purpose of this study was to examine the two communities at a specific point in time, 2010, to determine whether the research-based characteristics of a professional learning community are in fact present. These characteristics, such as frequent and job-embedded interaction and practice-based discussions, are noted in the conceptual framework found in Table 1. This study did not examine the actual processes of taking those approaches; rather, this study examined the results of having taken those approaches.

The approach of one local high school was to create learning teams first, starting in 2007. Schools that create learning teams first, as did this one, have often viewed the videos, attended the institutes, or read the literature of DuFour and associates (DuFour, 2004, 2007; DuFour, DuFour, Eaker, & Karharnek, 2004; DuFour, DuFour, Eaker, & Many, 2006; DuFour, Eaker, & DuFour, 2005; Eaker, DuFour, & DuFour, 2002. This particular local high school formed teams and then decided on topics to study or questions to ask, per DuFour's (2006) suggestions.

The other local high school took a new approach. The Department of Education in my Midwestern state began a new pilot program in 2007; this program involved volunteer high schools undertaking training to understand and implement a new learning framework called authentic intellectual work (AIW) (Newmann, King, & Carmichael, 2007). Undertaking AIW training has led small teams of teachers to learn how to discuss teacher tasks, student work, and authentic instruction and score these items against standards that speak to construction of knowledge, disciplined inquiry, and value beyond the classroom. I learned about AIW as I supported, on site, high schools in my local area that had started as pilot AIW schools. Recently, I underwent AIW coaches' training in support of AIW schools. As these small teams began and have continued their AIW efforts, I noted in one of the schools I support that a professional learning community seemed to be growing out of those efforts, rather than vice versa, as in the DuFour method. This other local high school took the approach of being one of the first to implement a new learning model from which teams and a professional learning community have grown.

Abundant literature addresses the benefits of creating professional learning communities compared with remaining in traditional structural models. Fewer studies have examined research-based characteristics in high schools resulting from use of a specific approach, compared with another approach, to develop their community. At the same time, there is little local experience with developing professional learning communities; this lack of experience and practice made this focus worthy of study. Examining two high schools at a given point in time to study the results of their chosen

approaches helps contribute to the body of knowledge needed to address beneficial ways of developing professional learning communities that contain research-based characteristics. Section 1 will offer a thorough overview of the study. Section 2 will refer to identification of research-based characteristics found within professional learning communities. In addition, section 2 will refer to details in the literature on these communities, including communities of practice and critical friends groups, isolationism, and shared leadership.

Problem Statement

Although local teachers and administrators have begun to realize the advantages to a professional learning community over a more traditional organizational structure, there are few local contextual experiences in developing professional learning communities that contain research-based characteristics. From my observation of local high schools and their organizational structures, the high schools undertaking this work of developing professional learning communities have little contextual or peer guidance. With little local experience in developing these communities, and therefore some hesitance in undertaking the risky work of moving from traditional organization to professional learning community, it is possible there may be no research-based characteristics of professional learning communities present by design in local high schools. There is a need for increased understanding of what approaches may result in professional learning communities that meet research-based characteristics. One factor that contributes to this problem may be that high schools in general have been reluctant to change traditional structures over time. In many local high schools, to my observation,

decision making occurs along a linear, bureaucratic method, from boards to superintendents to building principals to department heads. There is little shared leadership—leaders and teachers together—in terms of constructing knowledge about effective instruction, for example. Sometimes leaders simply ask for input when needing to make a sole decision and consider this shared leadership. Another factor may be that local high school teachers feel threatened in opening up their practices to colleagues; they prefer to teach what they think is best, or what they have to teach, behind their closed classroom doors. A third factor may be that the concept of professional learning community might be seen by local high schools as "just another fad" that will pass if they resist long enough so they can stay within the comfort of their traditional structures.

Those affected by this problem are educators and, subsequently, students. A concern about schools staying in traditional organizational structures is that teachers and students may miss the potential benefits of the research-based characteristics of professional learning communities. Without these communities, there may be missed opportunities for frequent, job-embedded professional learning; missed opportunities for ongoing, focused conversations on classroom practice; and missed opportunities to improve instruction through collaborative efforts.

I addressed this problem by studying two local high schools to search for the presence of research-based characteristics of professional learning communities existing in schools that took different approaches to creating the communities. I undertook this descriptive study to determine whether research-based characteristics of professional

learning communities were evident in each school. More detailed discussions of the research questions will be found in section 3.

Nature of the Study

Two local high schools each began a different approach in 2007 when they started to implement models to move toward creating a professional learning community. Unknown before the study was whether research-based characteristics of professional learning communities resulted in those schools from either approach taken. These characteristics are found in Table 1. To formulate research questions, I looked at the conceptual framework supported by these research-based characteristics and first crafted a specific, central research question.

Central Research Question

At its core, this study sought to answer this question: *What research-based characteristics of professional learning community are evident in two local high school professional learning communities, each of which took a different approach to community formation?*

Research Subquestions

I developed connected subquestions from the central research question. I was careful to look at the conceptual framework, the main research question, and my crafted subquestions to assure alignment between and among all three. I wanted to be certain my subquestions supported my main research question, which is tied directly to the characteristics in Table 1. Further, my interview questions (Appendix A) emerged directly from my subquestions. My target, through all these questions, was to seek

evidence of research-based characteristics present in the professional learning community at the point in time in which I studied them.

Subquestions to the main research question were the following:

1. What leadership style is evident at each school and how does it affect the work of the professional learning community?

2. What is the organizational structure of the school calendar, particularly regarding professional development?

3. What support is evident for professional learning community in each school in terms of infrastructure, district, financial, and attitudinal support?

4. Did this professional learning community establish shared vision, mission, goals, and actions for its work? If so, how have those shared components shaped or driven the work of the educators?

5. What are the expected processes of working within a professional learning community?

6. What are the expectations for the work of the professional learning community?

Some subquestions and interview questions connect directly to the notion of administrative leadership, and upon first glance, leadership does not seem to be among the research-based characteristics found in Table 1. Administrative leadership, however, is implied in all the characteristics, and perhaps most strongly in *shared decision making, educator actions based on shared purpose,* and *workplace relationships.*

More detailed discussions of the research questions will be found in section 3.

Purpose of the Study

The purpose of this research study was to examine two different high school professional learning communities at a given point in time to look for research-based characteristics of professional learning communities. Each high school, beginning in 2007, took a different approach to developing professional learning community. A close examination of the work of the schools' communities revealed whether the approaches resulted in the presence of research-based characteristics that define professional learning communities commonly understood in current research.

Conceptual Framework

The conceptual framework of this topic is based on the work of several researchers who collectively support the research-based characteristics within a professional learning community. Those characteristics, represented in Table 1, are the following:

- Frequent, job-embedded, ongoing, and inquiry-driven interaction among educators (Bryk, Camburn, & Louis, 1999; Louis, Kruse, & Associates, 1995; Louis, Marks, & Kruse, 1994);
- Collective responsibility for student learning (Kruse & Louis, 1995; Lee, Smith, & Croninger, 1997; Little, 1990; Marks, Louis, & Printy, 2000; McLaughlin & Talbert, 2001; Newmann & Wehlage, 1995);
- Practice-based discussions (Horn & Little, 2010; King, Newmann, & Carmichael, 2009) moving toward high-risk conversations (Joyce & Showers,

2002), including discussion of instruction, using artifacts of classroom practice (Newmann et al., 2007);

- Educator actions based on shared purpose, planning, preparation, and decision making (Curry, 2008; Lambert et al., 2002; King et al., 2009; Lee et al., 1997; Louis et al., 1994; Newmann, Marks, & Gamoran, 1996; Wenger, 1998; Wenger, McDermott, & Snyder, 2002a, 2002b); and
- Workplace relationships promoting collegial work and reciprocal coaching (Joyce & Showers, 2002; King et al., 2009; Louis & Marks, 1998; Marks & Louis, 1997; Newmann et al., 2007); and focusing on learning and results through collegial action (Kruse & Louis, 1995; Louis & Marks, 1998; Louis et al., 1994).

Table 1

Research-Based Characteristics Present in Professional Learning Communities

Frequent interaction among educators	Practice-based discussions moving toward high-risk conversations, including discussion of instruction, using artifacts of classroom practice
Job-embedded interaction	Educator actions based on shared purpose, planning, and preparation
Ongoing interaction	Workplace relationships promoting collegial work and reciprocal coaching
Inquiry-driven interaction	Shared decision making, including nonlinear shared leadership among designated building leaders and teacher leaders
Collective responsibility for student learning	Focusing on learning and results through collegial action

Supporting Theories

Two theories undergird the collective characteristics of professional learning communities: constructivism and social learning theory. Constructivist theory is abundant in the literature of Lambert and associates (Lambert, 2002, 2003a, 2003b, 2006; Lambert et al., 2002) as they draw on prior theorists such as Dewey, Bruner, Piaget, Vygotsky, and several others (Lambert, Walker, Cooper, Lambert, Gardner, & Ford Slack, as cited in Lambert et al., 2002). Constructivism can be construed in two arenas: constructivist learning and constructivist leadership, both of which support the conceptual framework of professional learning communities.

Constructivist learning may be described as "[a] constructive process in which the learner is building an internal representation of knowledge, a personal interpretation. This representation is constantly open to change, its structures and linkages forming the foundation to which other knowledge structures are appended" (Bednar, Cunningham, Duffy, & Perry, 1992, p. 21). Constructivist learning is knowledge built from within, stimulated by knowledge from without.

Constructivist leadership may be described as a reciprocal process among adults in a school (Lambert et al., 2002). Lambert spoke of constructivism as a "theory of learning that has emerged from a theory of knowing" (p. 7). She acknowledged that the theory of knowing was first articulated by Piaget, in the idea that when people (essentially, any organism) encounter new experiences, they adjust to accommodate the new information. Through experiences and adjustments, people "assign meaning to experience and at the same time construct knowledge from experience" (p. 7). Lambert stated both theory of knowing and theory of learning are processes of "'coming to know'" (p. 7). These coming-to-know processes are "influenced and shaped by reflection, mediation, and social interactions" (p. 7). Bednar et al. (1992) further explained: "Consistent with this view of knowledge, learning must be situated in a rich context, reflective of real-world contexts for this constructive process to occur and transfer to environments beyond the school or training classroom" (p. 22). Social interactions, which reflect the real world of the classroom, are a necessary part of professional learning communities.

A second theory, social learning theory, also supports the collective characteristics of professional learning communities. Bandura (1969, 2005) reported that, in social learning theory, people learn behavior from watching behavior modeled in a social context. In professional learning communities, educators gather in teams of some kind to discuss and work and share teaching practices, modeling in front of each other social behaviors such as discussing student work or lesson plans or instructional processes together. There may be conversation protocols in place; there may be structures to their sharing. They discuss and share their experiences together in order to learn and construct knowledge; in any team of educators, each brings a different set of experiences to share so all may learn.

Local Phenomenon: Two Approaches

I observed a local phenomenon regarding the concept of professional learning community that supported my interest in conducting research. From my observation, some local high schools in my geographic area began to develop professional learning communities in recent years based generally upon one of two approaches. Once the approaches were taken and the professional learning communities begun, I became interested in whether these communities exhibited research-based characteristics that, if maintained, should benefit educators and students alike. In this study I focused on two high schools in particular and the results from the approaches taken by these schools.

One approach was that one of the two local high schools started reading DuFour and associates' literature, such as *Learning By Doing* (DuFour et al., 2006), on creating professional learning communities. DuFour, while not a primary researcher himself, is a

solid secondary source of information on what researchers have written about professional learning communities and the characteristics of those. DuFour and associates' materials, conferences, and institutes are well attended and well marketed, including postattendance I myself attended a DuFour institute on professional learning communities. This particular high school viewed DuFour DVDs on professional learning communities and used a DuFour book to then guide them into forming teams. These teams chose topics for discussion and began to use the four DuFour questions (DuFour et al., 2006) to guide them: (a) What do we want students to know?, (b) How will we know if they have learned it?, (c) What will we do if they haven't? and (d) What will we do if they have already learned it? For this study, I have termed this approach *Team Creation First*.

A second approach was evident in the other local high school. This high school began by adopting a learning model, through a pilot program across the state, called AIW (King et al., 2009; Newmann et al., 2007). Through this learning model, a professional learning community emerged at the school. I have observed several of the same tenets of what DuFour and colleagues advocate in *Learning By Doing* (DuFour et al., 2006), such as gathering on a regular basis to discuss teaching practice. These tenets seemed to be a natural outgrowth of the teamwork in AIW. AIW focuses on professional discussion of classroom artifacts such as teacher tasks, student work, and classroom instruction. A professional learning community seems to grow from having adopted the AIW framework, a framework that sets up teachers to discuss collaboratively teacher tasks, for example, against standards that speak to construction of knowledge, disciplined inquiry,

and value beyond school (King et al., 2009; Newmann et al., 2007). For this study, I have termed this approach *Learning Model First.* It was because of these two different approaches to professional learning community in my local area that I became interested in the results from schools' having taken either of those two approaches. I was curious about the characteristics possessing a firm research base found within these two communities that could enable success for forming professional learning communities in other high schools.

These two local high schools began to form professional learning communities in 2007. Each chose a different approach to forming that community. It was, however, unknown if these approaches resulted in establishing research-based characteristics within those communities. Discovering this unknown piece justified and supported conducting this research.

Definition of Terms

For purposes of this study, the following terms are defined:

Collaboration: "a *systematic* process in which people work together, *interdependently*, to analyze and *impact* professional practice in order to improve individual and collective results" (DuFour et al., 2006, p. 214).

Craftsman-constructivist leaders: "empathetic and effective developers of people" (Sergiovanni, 2005, p. 164) who practice "reciprocal processes that enable participants in an educational community to construct meanings that lead toward a shared purpose of schooling" (Lambert et al., as cited in Lambert, 2003b, p. 423).

High-risk conversations: collaborative conversations, particularly in peer or reciprocal coaching situations, in which educators are willing to open up their practice to their colleagues and discuss instruction in terms of what works in the classroom, what does not work, offering and receiving critique, strategies to try, and how to improve learning for students. Joyce and Showers (2002) depicted the relationship between types of training (knowledge, skill, transfer) to "the percentage of participants likely to attain them when combinations of components are employed" (p. 78), of which peer coaching is the most desired as it causes taking high risks in professional learning.

Professional learning communities: "collaborative teams whose members work *interdependently* to achieve *common goals* linked to the purpose of learning for all. . . in ways that will lead to better results for their students, for their teams, and for their school" (DuFour et al., 2006, p. 3).

Results: indications of student progress that are part of collaborative work in a professional learning community: "The rationale for any strategy for building a learning organization revolves around the premise that such organizations will produce dramatically improved results" (Senge, Kleiner, Roberts, Ross, & Smith, 1994, p. 44).

Shared leadership: when the designated leader/principal "develop[s] the capacity of collaborative teacher teams whose members. . . learn from one another rather than from the principal" (DuFour et al., 2005, p. 239).

Assumptions

This study is based on several assumptions. A first assumption was the ability to conduct a fair and unbiased research study with schools I support in my regular position

as a professional learning and leadership consultant; in turn, another assumption was that the participants would offer honest perspectives to me, a person they were asked to view as a researcher in this situation, not as their educational agency support person. It was assumed the educators who participated had an in-depth knowledge of their school's professional learning community. It was assumed that participants gave truthful answers when interviewed about practices of their professional learning community. It was also assumed that they offered enough robust details when answering during an interview to allow for rich descriptions. Finally, it was assumed the professional learning communities studied would produce artifacts to examine.

There were also assumptions to be made when choosing to examine a professional learning community at a point in time three years or so after its beginning. One assumption was that the educators in the two targeted high schools had made adjustments of some kind over time even though they began the community through one of the two approaches approximately three years prior, in 2007. It was assumed when examining a professional learning community in this study that the two high schools had had the ability to determine how to create job-embedded time for collaborative teams to meet and for sufficient time. There was an assumption that the principal of each high school was knowledgeable about the educators in her building and could select the appropriate people for participation in the study, given their willingness to become involved and that they met set criteria. Finally, it was assumed that each principal could determine who the most knowledgeable members of each staff were in terms of their professional learning

community: those most familiar with the operations of the community and those most engaged, for example.

Limitations

A possible limitation to this study was that both schools studied were similar in demographics and therefore may have not represented other sizes or types of high schools possibly interested in establishing a professional learning community along the lines of a research study. At the same time, this limitation may have been a benefit considering that the school demographics are similar and can be compared more easily. Another potential limitation was that this study was confined to only two specific high schools in my Midwestern state and the results might not be typical for other schools and regions.

In addition, a limitation was that the participants in the study were offering self-reported data during the interviews. The potential was there for participants to offer answers to interview questions that they thought would shine a more favorable light on their school rather than honest answers that would help give a full, rich description of the current work of their professional learning community. I urged honest answers from participants, reminding them that their school and educator names were pseudonyms in the study itself so embellished answers would signify nothing in terms of readers feeling favorably toward a known school. Connected to this limitation was the possibility that a participant may not have been feeling well, for example, the day of the interview but did not reveal that; this person may have given answers that would not have been the same kinds of answers given on a different day. At the beginning of each interview, I

discussed the voluntary nature of participation; this precursor to the interview helped offset a chance that participants felt obligated to participate.

Another possible design weakness might have been that interviewing five educators at each site may not have offered as broad a perspective as more interviewees might have; these limits on interview participants were in place because of time constraints. Interviewing five (including administrators and teachers) in depth, however, helped rectify this possible weakness, as did gathering other data by means of observing professional learning community teams at work and examining artifacts of the work of teams. Another potential weakness of the study was the utility of the conceptual framework. While the framework was created according to concepts found in the literature regarding professional learning community, the potential existed that the usefulness of the framework may have been less than intended. Nonetheless, my intention was to use it to its full potential in determining characteristics present in the two professional learning communities.

Last, a potential limitation of the study might have been that I am a consultant assigned to each of the two schools to be studied; this potential limitation will be addressed in section 3.

Scope

The cases in this study were the two aforementioned local high schools, one of whom began developing professional learning community in about 2007 using one approach, and the other who began developing a community at about the same time by following another approach. The action of taking the approaches was completed. The

intent of studying these two cases was to examine them at a certain point for research-based characteristics of the conceptual framework upholding the study. The study was about looking at content, not the processes of forming the professional learning communities. These cases were bounded in several ways, specifically by issue, by time, and by location.

The cases were bounded by issue. The scope or bounds of this study was to look for the presence of research-based characteristics—found in the study's conceptual framework—within the two professional learning communities. The scope did not include looking at the processes taken in creating that community. The scope involved seeking the presence of research-based characteristics that resulted from the approach taken.

The cases were bounded by time. Each school's professional learning community was relatively recently formed; they had not had many years of existence in order for educators to experience the trial and error of adjusting and maximizing the opportunities for learning and growing in such a community. I interviewed participants about characteristics within their professional learning community, observed their team meetings, and examined artifacts of work within a community, all in a narrow window of time.

The cases were bounded by location. Each high school was located in a suburban setting. They were local to my region in my state.

Delimitations

In terms of bounds of issue, this study was not about studying two full faculties at each site; it was not about studying how these two high schools moved through the process of starting a professional learning community. It was about examining the research-based characteristics of recently formed communities through the eyes of specific educators, building leaders and teachers alike, who had been key individuals involved in developing professional learning community through collaborative teaming. Therefore the study was delimited to specific participants at each site. In terms of bounds of time, the study was delimited to viewing a slice of the work of professional learning community in each of two schools at a given point in time. It was delimited to one interview for each of five educators at each high school, one observation of two different collaborative teams at work at each site, and examination of available team artifacts. The study was also not about any given high school; it was delimited in location to two specific local high schools, both of whom were developing professional learning communities, but both of whom had begun those communities through distinctly different approaches.

Significance of the Study

Examining the research-based characteristics found within professional learning communities was significant and worthy of study for several reasons. The study showcases two separate high schools that had taken different approaches to creating these communities, and, further, brings readers inside the work of those communities at a given point in time. Specifically, examining the research-based characteristics of each

approach was worthy of study as many local high schools had chosen to move along the DuFour path of professional learning community formation; several other local schools had chosen to adopt the AIW framework as a first step. It is not unreasonable to think that high school faculties may choose methods to form professional learning communities just because information, books, DVDs, or conferences are available, appealing, or attractively packaged, or because grant monies are available. It was worth looking at a professional learning community at a point in time to see if that choice of approach resulted in evidence of the research-based characteristics found in Table 1. This study was also worthwhile because a close examination of the results of a school's having adopted AIW had not been undertaken before. Finally, it was significant that this study focused specifically on what was present in local high school professional learning communities regarding practices and content. This study provides information that may indeed offer some guidance and contextual experiences in developing professional learning communities.

This study fosters positive social change. Obtaining results that show research-based characteristics of professional learning communities may help readers of this research decide to discuss professional learning communities for their high school. Because formation of these communities at the high school level is dissimilar to the historically private practice of secondary teachers, the very creation of professional learning communities can foster positive social change by supporting a structure that allows and encourages teachers to learn together how to become better educators. Despite its risks that "teacher-to-teacher interaction [can] . . . make the micropolitics of

the school more visible" (Little, 1990, p. 521), Little also stated, "Teachers open their intentions and practices to public examination, but in turn are credited for their knowledge, skill, and judgment" (p. 521). Studying the results of two different approaches taken by local high schools in the creation of professional learning community is a sensible way to look at what works per the research, break the myth of privacy, and foster positive social change in the world of high school education for teachers.

Summary and Transition

A main point in section 1 was the description of the problem of local high schools having had little experience or having seen few local contextual experiences in developing professional learning communities. Despite little local contextual guidance, two local high schools nonetheless began formation of professional learning community and took two different approaches to forming that community. The gap in understanding was, however, that it was unknown if these two different approaches had resulted in establishing professional learning communities that exhibited research-based characteristics. Another main point in section 1 was the research question, *What research-based characteristics of professional learning community are evident in two local high school professional learning communities, each of which took a different approach to community formation?* The purpose of the study was to examine two different high school professional learning communities at a specific point in time to look for research-based characteristics of professional learning communities. In section 1 I also offered the conceptual framework for the study, which included a table showing 10

different research-based characteristics of professional learning communities. Six terms used in the study were defined and those definitions supported by the literature. Several assumptions and limitations to the study were discussed. In section 1 I also spoke to the study's bounds of issue, time, and location, as well as to delimitations. I discussed in section 1 the significance of the study—that this study offers some guidance and contextual experiences for schools interested in developing professional learning communities containing research-based characteristics. Last, I offered in section 1 comments on the positive social change forthcoming as a result of this study.

In section 2 I will address the literature on professional learning communities and their development. I will also address shared leadership and a selection of and rationale for the research tradition. In section 3 I will address the research method and rationale, details of the research question, context for the study, the role of the researcher, selection of participants, data collection procedures, data analysis, and trustworthiness of the data. I will offer, in section 4, results and findings, and I will offer conclusions, interpretations, implications, recommendations, and reflections in section 5.

Section 2: Literature Review

A review of the literature regarding professional learning communities revealed a range of information. I read books and chapters from books, articles, and journals, both peer reviewed and nonpeer reviewed. I read research studies. I viewed DVDs and reviewed information gathered from national workshops on professional learning communities. I spoke, in person and through e-mail, with primary researchers whose focus has been some aspect of learning within professional learning communities. The content I found ranged from terminology to characteristics and processes found within these communities to leadership aspects to reasons behind the lack of professional learning community in schools. The literature supported several broad ideas that will be explored in this review.

Organization of the Literature Review

In this review, connections will be examined between the research and the research question and the relationship of the current study to previous research. A summary of the literature will substantiate the conceptual framework of professional learning communities. Next, potential ideas and perceptions will be examined. Finally, literature will be reviewed related to the method of the study as well as literature related to use of differing methodologies.

Two sources were used to begin the search of the literature on professional learning communities: (a) the reference list in *Learning By Doing* (DuFour et al., 2006), a popular DuFour book mentioned in section 1; and (b) the reference list in the authentic intellectual work (AIW) book (Newmann et al., 2007). In addition, I asked Newmann

himself (personal communication, January 19, 2008) the best sources on professional learning community through the AIW literature. I continued by searching three primary databases: (a) Academic Search Elite, (b) ERIC, and (c) The Professional Development Collection. I used Google Scholar as well. Throughout my exploration, I used search terms such as *professional learning community*, *learning community*, *professional community*, *teacher autonomy*, *teacher leadership*, *teacher isolation*, *shared leadership*, *teacher conversations*, *peer coaching*, *collective responsibility*, *constructivism*, and *collaboration*. Upon each perusal of information, I noted new authors and researchers in authors' reference lists and continued to read more deeply.

I reviewed the literature and stayed focused on characteristics resulting from creation of a professional learning community. Using the search terms within the databases, I was led to contemporary literature on professional learning community as well as seminal work by researchers beginning in the 1980s and continuing into the 2000s. The strategy led me to read not only original research studies but also to connect personally with four researchers regarding their perspectives on professional learning community and advice for further resources: Donaldson (personal communication, June 4, 2009); Lee (personal communication, October 20, 2008); Little (personal communication, August 24, 2009); and Newmann (personal communication, January 18, 2008).

The Current Conversation Regarding Professional Learning Communities

The literature review reveals the current conversation in the study of professional learning communities. The literature is from both peer-reviewed journals and nonpeer-

reviewed journals; however, it may be perceived that there are too few peer-reviewed journals. A reason for this is because of the abundance of current authors who are solid secondary sources, who draw on primary research, and who are often practitioners but who do not themselves do research studies regarding professional learning communities. Their literature revealed practices of schools engaging in the development and work of these communities, including positive aspects and challenges, all of which are of value. Another acknowledgement is the perception that there is nothing in this literature review about the effectiveness of these characteristics of professional learning communities. This is because, although I looked, there is little literature regarding research-based effectiveness of these characteristics. When I read and analyzed the body of literature on professional learning communities, I recognized shared characteristics that were present in several studies and sources about different aspects of professional learning communities; these comprise the conceptual framework.

In addition, it is important I speak to the dates of the literature. The literary works, from both primary and secondary research sources, date from within a range of about 20-25 years ago to within the last five years. Many of the seminal pieces are from longer ago than the last five years. In fact, most of the classic works on professional learning communities date from the mid-1990s to the mid-2000s. Many of the 1990s pieces of literature provide the best look at characteristics of professional learning communities because of the research on restructuring schools as a result, for example, of some very large studies such as the National Educational Longitudinal Study (NELS), which began in 1988 and continued in 1990 and 1992, and of which many researchers

took advantage (Huang, Salvucci, Peng, & Owings, 1996; Lee, Smith, & Croninger, 1995, 1997). While there is research on authentic work (King et al., 2009; King, Schroder, & Chawszczewski, 2001; Lee, Smith, & Croninger, 1995; Newmann, Lopez, & Bryk, 1998; Newmann et al,, 1996), even much of this research is not recent and so there are not many current articles on AIW. Following the research studies of the 1990s into the 2000s were authors and practitioners who wrote about how actually to form teams and professional learning communities as a result of the earlier studies. Also, there are not many research studies on these communities and their impact on achievement; ones that exist are from further back than the last five years. For this literature review and study, the sources contained within are the ones in use; they are the most appropriate to examine to see what schools are actually using to guide them in their understanding of professional learning community. They are the most relevant to use.

I read and gathered information from all pertinent sources on professional learning communities to capture fully the leading voices in this field. My research fits with these leading voices as the research study examines the presence of research-based characteristics of professional learning communities in high schools that began their communities by taking one of two aforementioned approaches.

The research contributes to that discussion by revealing the presence of those characteristics and therefore helps high schools who might seek support and peer guidance for development of professional learning community. Through this literature review, and then through my study, the study “contribute[s] to the current conversation”

(Hatch, 2002, pp. 221) regarding professional learning communities at the high school level.

Before the more formal review of the literature, an understanding of terms found in the reading must be noted. Noticeable within the literature focused on professional learning communities was the fact that this concept went by several terms containing similar components. *Professional community* was the term used in the early research and literature of Newmann and associates (Newmann & Wehlage, 1995; King & Newmann, 2004), as well as in the literature of those researchers associated with Newmann at the Center on Organization and Restructuring of Schools (CORS) out of the University of Wisconsin-Madison (F. M. Newmann, personal communication, September 29, 2008). These were researchers such as Louis et al. (1994) and Kruse and Louis (1995). Others from CORS used the term *communally-organized schools* (Lee et al., 1995). Garmston and Wellman (1999) used the term *collaborative groups* although they moved to the term *professional community* in their 2009 work. Wenger (1998, 2001; Wenger et al., 2002a, 2002b) used the term *communities of practice*. A fourth term, *Critical Friends Groups*, was in the literature of Bambino (2002, 2007); Dunne, Nave, and Lewis (2000); and Curry (2008). Schmoker (2004) along with Wells and Feun (2007) used the term *learning communities*. Another term, *teacher learning communities*, was found in the literature of Wiliam (2007) and Leahy and Wiliam (2009) and was used by these two researchers in support of teacher groups supporting formative assessment practices. Finally, the term *professional learning communities* was found most prominently in the literature of DuFour (2004, 2007) and associates (DuFour et al., 2004; DuFour et al.,

2006; DuFour & Eaker, 1998; DuFour et al., 2005; Eaker et al., 2002). The single term *professional learning community*, however, is used consistently throughout this study.

Connections Between Research and the Research Question

This study sought answers to the following question: *What research-based characteristics of professional learning community are evident in two local high school professional learning communities, each of which took a different approach to community formation?* In addition, research subquestions narrowed the search for answers, particularly in terms of leadership, organizational structures, support, guiding principles, and expectations. These subquestions are displayed more fully in the Nature of the Study in section 1 as well as in section 3. An exploration of the common characteristics and ideas from the research supports connections to these questions.

Review of Related Research

Literature Regarding the Two Approaches

The literature on the two approaches, *Team Creation First* and *Learning Model First*, was mixed in its availability. As a reminder, *Team Creation First* describes the situation when schools decide to form professional learning communities first by reading current literature on how to create learning teams in a school, forming those teams along the suggestions in the literature, and then choosing topics to discuss. *Learning Model First* describes the situation when a school adopts a particular learning model, such as AIW (Newmann et al., 2007), and then works to establish the learning model from which professional learning community grows. To be clear, *Team Creation First* had an abundance of literature, but *Learning Model First* had only the circumstances of its pilot

implementation in my Midwestern state. *Learning Model First*—that is, AIW (King et al., 2009; Newmann et al., 2007)—had its own research base in the previous work of Newmann, but taking the approach of implementing AIW had no precedent in my Midwestern state, and very little precedent elsewhere.

One local high school in my study took the *Team Creation First* approach, and this approach came largely from the literature of DuFour and associates (DuFour, 2004, 2007; DuFour et al., 2004; DuFour et al., 2006; DuFour et al., 2005; Eaker et al., 2002). A review of the DuFour literature revealed ideas of encouraging educators to study the secondary-source DuFour books and DVDs; discuss, plan, and work toward the necessary cultural shifts; and keep the following four DuFour questions at the forefront of a professional learning community: (a) What is it we want students to learn?, (b) How will we know if they have learned it?, (c) What will we do if they have not learned it?, and (d) What will we do if they have already learned it? (DuFour, et al., 2006).

The other high school in my study took the *Learning Model First* approach. The approach to learning how to implement AIW (King et al., 2009; Newmann et al., 2007) did not have a research base as the approach itself was being piloted in my Midwestern state; the components of authenticity within the learning model itself did have such a base. Newmann and Wehlage (1995) did a national study that revealed when the three elements of teacher task, instruction, and student work all focused on the components of authenticity (construction of knowledge, disciplined inquiry, and value beyond the classroom), all students, regardless of demographics or achievement level, benefited. Other large studies contributed to the present learning model of AIW, particularly those

that measured student achievement using standards for AIW, such as the 1996 study of Newmann et al., the 1998 study of Newmann et al., the 1999 study of Avery, and the 2001 study of King et al. King et al. (2009) stated:

> Research in schools across the United States and internationally. . . uncovered substantial positive achievement benefits for students. . . [and] we concluded that teachers should have opportunities for professional development to help them use the [AIW] standards and rubrics to guide their teaching and assessment of student work. (p. 49)

Literature on Professional Learning Community

A review of the larger body of literature regarding professional learning community is in order. A view of the conceptual framework for this study came through the work of Little (1987, 1990, 1999); Louis et al. (1994); Kruse and Louis (1995); Louis et al. (1995); Newmann et al. (1996); Lee et al. (1997); Marks and Louis (1997); Louis and Marks (1998); Wenger (1998, 2001), Bryk et al. (1999), Marks et al. (2000); Newmann, King, and Youngs (2000); McLaughlin & Talbert (2001); Joyce and Showers, (2002); Lambert et al. (2002); Wenger et al. (2002a, 2002b), Bambino (2002, 2007), Newmann et al. (2007); Curry (2008); King et al. (2009); and Horn and Little (2010). In a general sense, the above-named researchers described the conceptual framework for a professional learning community as one where interaction among educators is frequent, job embedded, ongoing, and inquiry driven; educators have collective responsibility for student learning; discussions are practice based and include talking about instruction using artifacts of classroom practice; actions are based on shared purpose, planning, and

preparation; classroom observations of each other promote collegial work and reciprocal coaching; decision making is shared; and the focus of collegial action is on learning and results. In addition, regarding practice-based discussions, Joyce and Showers (2002) added a dimension of the importance of participants moving toward high-risk conversations in order to make transference of professional learning significant for both adults and students. These components are summarized in Table 1 in section 1. In other words, educators learn through social interactions with colleagues who have varied expertise in the topics discussed; these educators have sustained discussions connected to mutual interests, particularly those of classroom-based practices. These characteristics found through the literature survey supported the rationale behind this research study.

Supporting Ideas From the Literature

Along with revealing common research-based characteristics present in professional learning communities, the literature review on these communities brought forth additional ideas and concepts that support several of the characteristics within the conceptual framework. These broad concepts—shared leadership, moves away from isolationism, and leaders modeling collaboration—describe the necessary infrastructure within a school to support the presence of characteristics and processes mentioned elsewhere. Details of the infrastructure connect and support directly the common characteristics evident in the framework of professional learning community, no matter what kind of approach had been taken in development. The literature review on these three supporting ideas follows.

Concept of shared leadership. The concept of shared leadership includes four main ideas.

Creating shared vision. Several ideas emerged from the literature regarding the concept of shared leadership. One idea addressed the necessity of first creating a shared vision in a faculty. Senge et al. (2000) reported shared vision offers the "sense of commitment together" (p. 72) and offered "visions based on authority [when a principal or superintendent builds a vision] are not sustainable" (p. 72). Hord and Sommers (2008) also reported on this idea of shared vision, and, once created, keeping it at the forefront of planning and instruction (p. 10).

Leader commitment to change. Another issue in the literature was the necessity of administrators' personal commitment to change. Louis (2008) found "one of the problems with efforts to change the culture of the schools through PLCs is that administrators typically want to change everything but their own work" (p. 48). Personal commitment to change includes changing self and others. Lindsey, Roberts, and CampbellJones (2005) offered five principles of cultural proficiency that allow a motivated building principal to begin to change the culture of a school: (a) culture is a predominant force in people's lives, (b) the dominant culture serves people in varying degrees, (c) people have both personal identities and group identities, (d) diversity within cultures is vast and significant, and (e) each individual and each group has unique cultural values (p. 20).

Collaborative problem solving The concept of collaborative problem solving, through shared leadership, appeared in several pieces of research. Little (2002),

Marzano, Waters, and McNulty (2005), and Schmoker (2006) all reported that decision making, discussion, critique, and debate are best done by groups or teams of educators, so no one voice dominates. Marzano et al. (2005) reported, for example, that knowledge of curriculum, instruction, and assessment "involves the acquisition and cultivation of knowledge regarding best practices in curriculum, instruction, and assessment . . . and that it seems reasonable that a team of committed people can address this responsibility more effectively than any one individual" (p. 106).

Constructivist leadership styles. Another idea for shared leadership emerged from the literature: constructivism or an inviting culture. Lambert (Lambert, 2003a, 2003b, 2006; Lambert et al., 2002) reported on constructivist leadership styles. Lambert et al. (2002) stated that the patterns of *reciprocal processes* (p. 42) "enable participants in a community to construct meaning and knowledge together. . . [and] shared purpose and collective action emerge" (p. 42). Shared leadership is a natural part of constructivism as constructivist leaders intentionally draw others into "mutual and dynamic interaction and exchange of ideas and concerns" (p. 44). Marzano et al. (2005) stated that building principals are members of leadership teams, but they do not deem any certain topic for work or study. They allow it to be the collaborative efforts of the team to address a topic (p. 106), which follows a constructivist style. Novak (2005) reported on concepts of invitational leadership, where leaders "attend to interactions among and between the teachers, administrators, custodians, volunteers, parents and students" (p. 47) to "develop a sense of respect for each other in developing a professional learning community" (p. 47). Key to a constructivist or invitational leadership style is a body of teachers in a

given school setting stepping up to that leader's invitation to become true teacher leaders who are part of those reciprocal processes. Teacher leadership in reorganized school structure literature was a prominent focus of researchers and authors such as Donaldson (1987, 2006, personal communication, June 4, 2009), Barth (1990, 2004), and Sergiovanni (2005).

Concept of isolationism. Three ideas and one less predominant concept emerged from recent literature on the isolation of teachers: (a) the need to purposely help teachers form groups; (b) professional educators have not learned how to collaborate well; (c) using an outside coach or facilitator may be beneficial; and (d) less predominantly, the idea that isolation is understandable from a personal viewpoint. Connected to isolationism is its opposite in the literature: a move away from isolationism toward groups or teams.

Forming educator groups. The concept of purposely forming educator groups emerged from the National School Reform Faculty, the professional development unit of the then-young Annenberg Institute for School, in 1994 (Dunne et al., 2000), as well as from the literature of Bambino (2002, 2007) who reported on the successes of Critical Friends Groups. Critical Friends Groups represent a move away from the *leadership by mandate* approach (2007, p. 358). The focal leadership point driving Critical Friends Groups is one of this philosophy: "We understand that real leadership starts when we accept that we don't know the answers and cannot find them alone" (2007, p. 358). That philosophical statement was a topic prominent in the research of another who has studied Critical Friends Groups, Curry (2008). While Critical Friends Groups are comprised

mostly of teachers, Curry noted that administrator presence in Critical Friends Groups is not uncommon, although great care must be taken that evaluative or judgmental fears of teacher Critical Friends Groups members are allayed. Waters, Marzano, and McNulty (2003) reported on this same concept of educator groups, through the team leadership aspect of the Balanced Leadership Framework, and particularly the philosophical stance of collective efficacy: We can accomplish together what we cannot accomplish alone.

Prior lack of opportunity. The literature review revealed that because high school teachers have been isolated in their classrooms, collaborative work has not been learned well and there has been lack of opportunity. Mackenzie (2007) reported teachers feeling unsettled examining and sharing their own and others' beliefs, discussing topics, needing to come to consensus, all of which would typically be done in a professional learning community; she reported that doing this collaborative work requires beliefs and skills that will change teachers' perceptions about their job. Connecting to this idea emerged another concept: Bowe (2007) reported the benefits of bringing in an outside coach or facilitator to help teachers learn how to collaborate. An outside coach may also help ease the situation if principals merely wish to learn alongside their teachers. Donaldson (personal communication, June 4, 2009) also advocated for coaches.

Understandable isolation. The concept of understandable isolation emerged, although not in dominant form. Katzenmeyer and Moller (2007) maintained that teachers' desiring to work alone "should not be construed as an unhealthy way to work" (p. 72). Further, they offered that, like the general population, some teachers seek contact with their colleagues and some simply do not. This concept conveyed that, despite the

research base leading away from isolationism, it is understandable that some educators, perhaps because of personality, still will desire to work alone and will strive toward that.

Moving toward teacher groups or teams. Moving away from isolation and toward teams with a purpose is not always easy. Barth (2006) offered that, when adults are encouraged to move into teams, they typically interact in four common ways, the fourth of which is really the only one desired for teams with a focus on learning:

1. Parallel play: characterized by teachers and principals who keep to their own territories.
2. Adversarial relationships: characterized by competition among teachers with little idea exchange between teachers and principals; it can be why educators withdraw back to parallel play.
3. Congenial relationships: characterized by amicable relationships that are not necessarily oriented toward learning.
4. Collegial relationships: characterized by congenial relationships that go more deeply and are harder to develop, but can occur when teachers take risks to talk about their practice, share craft knowledge, observe one another, and support and help one another.

Barth (2006) stated, “Empowerment, recognition, satisfaction, and success come only from being an active participant within a masterful group—a group of colleagues” (p. 13).

In the literature, others promoted the importance of educator teams. Drago-Severson (2009) advocated for teaming as a developmental practice. She stated, “A

central theme that has emerged from my research with school leaders regardless of the position they held (superintendents, principals, assistant principals, teachers) is that teaming is a context for learning and for supporting adult growth" (p. 85). She added that she learned from the participants in her research studies that teaming helps adult educators "build relationships, decrease feelings of isolation, open communication, become aware of each other's thinking, learn from diverse perspectives, and share information and expertise" (p. 85). Garmston and Wellman (2009) promoted the use of teaming to create collaborative cultures in which adults share ideas and decision making. Lezotte (2005), while discussing his longstanding Effective Schools research (which countered earlier research called *The Coleman Report* of 1966 that said schools do not make a difference for children), advocated support for collaborative teaming processes to promote school change. Lezotte stated, "Our approach to school improvement relies on involvement by a collaborative, school-based school improvement team as the cornerstone and energy source for school-by-school change" (p. 183). Schmoker (2006), in Chapter 8 of *Results Now*, through his discussion of traditionally poor professional development that promotes dependence on outside expertise, stated, "Training implies that teachers must depend on new or external guidance because they don't know enough about instruction to begin making serious improvements. But teachers do have this capability—if, that is, they pool their practical knowledge by working in teams" (p. 109). DuFour and associates' many works promoted schools forming collaborative teams (DuFour, 2004, 2007; DuFour et al., 2004; DuFour et al., 2006; DuFour et al., 2005; Eaker et al., 2002), yet their literature recognized the challenges in moving away from

isolationism and toward collaborative teaming: "Despite the overwhelming evidence of the benefits of a collaborative culture, the tradition of teacher isolation continues to pose a formidable barrier to those hoping to implement PLC concepts in their schools" (DuFour et al., 2005, p. 18). Virtually all DuFour literature works to counter the tradition of isolationism. Along with strong leaders, the act of forming collaborative teams or groups is key to positive change and promotion of a professional learning community with research-based characteristics.

Concept of leaders modeling collaboration. There are four ideas central to this concept.

Administrators sharing leadership using constructivist practices. Lambert (Lambert, 2003a, 2003b, 2006; Lambert et al., 2002) is a prominent voice in advocating for shared leadership through constructivist practices. Through a study from 2006, her findings explored ideas including designated leaders' creating "high leadership capacity" (Lambert, 2006, p. 239), meaning "broad-based, skillful participation in the work of leadership" (Lambert, as cited in Lambert, 2006, p. 239). Another concept that resonated through Lambert's 2006 work (and earlier works) was her definition of leadership from what she observed: "Reciprocal, purposeful learning in community settings" (Lambert et al., as cited in Lambert, 2006, p. 239). Another concept emerging from her 2006 study was the fact that "each of the schools [studied] boasted significantly improved and sustained student performance for four to ten years" (p. 242), but each school also still "struggled with performance differences among subgroups despite a focus on their more vulnerable children" (p. 242). The issue of success with admitted struggle was evident in

Lambert's studies. Overall, Lambert's 2006 study reported successes in modeling constructivist leadership but with some uncertainties regarding the benefits of such leadership on achievement by subgroups.

Leadership and school improvement. Foster (2004) reported specifically on leadership and high school improvement. Ideas to emerge from Foster's study of two secondary schools in Canada were "competent administration and teacher leadership; tensions around issue[s] of influence and inclusion; and the strength in re-constructing roles and responsibilities" (p. 49). She found tensions arose from student and parent understanding of leadership and school improvement, as these differed significantly from perceptions of the educators studied (pp. 49-50). In fact, from these tensions Foster cautioned "that emergent perspectives of teacher leadership, although promising, cannot fully address the 'blank spots' in our understanding of the relation between leadership and school improvement" (p. 50). In ideas similar to Lambert (2006), Foster (2004) found that leaders modeling collaboration for teachers, through a shared social-influence process, held promise but there were still uncertainties regarding whether shared leadership improves learning.

Leaders encouraging other leaders. Donaldson (1987, 2006; Donaldson, Bowe, Mackenzie, & Marnik, 2004) has contributed much to the topic of leadership. In earlier work, Donaldson (1987) reported on his study of former participants of the Maine Principals' Academy. One idea emerging from this early study was the concept of "*engag[ing]* principals. . . to *encourage* them to explore, test, and accept a practice or idea, and. . . to *stay in touch* with one another as they try [different practices]" (p. 45)

rather than to train them. In more recent work, Donaldson et al. (2004) studied the Maine School Leadership Network, a creation of Maine's teacher and administrator associations, business leaders, and university system. One idea that emerged from this study, similar to Bowe (2007), was the concept of using coaches or facilitators with leaders, including *critical colleagues* or other colleagues willing to meet regularly to discuss (Donaldson et al., 2004; personal communication, June 4, 2009). Another concept that flowed throughout the findings was that of the designated leaders becoming "head learners" (Barth, 1990, p. 46) in order to foster communities of learners.

Leaders distributing leadership. Spillane, Halverson, and Diamond (2001), in their work that looked at leadership practice, described their *Distributed Leadership Study* (p. 23) conducted in elementary schools in the Chicago metropolitan area (ongoing at the time of their reporting). Their central notion could be described as this: "School leadership is best understood as a distributed practice, *stretched over* the school's social and situational contexts" (p. 23). They found that more powerful school leadership resided in the act of distributing that leadership rather than allowing it to reside in one individual. Spillane et al. did not speak to the issue of improved learning as a result of distributed leadership.

It seems, through reading the literature on leadership, that leadership plays as important a role as the actual formation of teams or groups within a professional learning community. Without a leader of vision, a leader who shares leadership and decision making with teachers, a leader who advocates for and invites teacher leaders to step forward into new roles among colleagues, a leader who creates opportunities for teachers

to interact and construct meaning together, groups of teachers who come together to discuss professionally their practice might have varying degrees of success with improving that practice. It may be that groups of teachers can progress only so far if they do not have leaders with a *craftsman-constructivist* style; that is, the leaders are, "empathetic and effective developers of people" (Sergiovanni, 2005, p. 164) who practice "reciprocal processes that enable participants in an educational community to construct meanings that lead toward a shared purpose of schooling" (Lambert et al., as cited in Lambert, 2003b, p. 423). Leadership style matters in professional learning community that contains research-based characteristics.

In the literature, I found evidence of leadership and I found evidence of the formation of groups or teams. It is clear there is a relationship between leadership that understands and promotes the role of collaboration and the collaborative team concept itself. Teams may struggle with meaningful professional work—or may not even be supported in forming groups to start with—if the school leader works in a more linear manner by handing down structures, guidelines, and preset decisions, in effect disallowing teachers' constructing knowledge together and perhaps even maintaining isolationism. A leader may allow or even promote formation of groups or teams, but if neither the teams nor the leader understands the characteristics of team work within a professional learning community, the teams contain little more than what Barth (2006) called "congenial relationships" (p. 11). The literature showed the best chance for success may occur when a *craftsman-constructivist* leader leads a faculty to form teams that learn and professionally grow together.

Comparing and Contrasting Differing Points of View

Contrasts. Interestingly, research studies and the literature showed some different research outcomes for professional learning community. While comparing studies brought forth many of the common research-based characteristics found in Table 1, contrasting studies displayed a few dilemmas found within the nature of forming a professional learning community. Katzenmeyer and Moller (2007) held forth that isolation on some teachers' part is understandable and that some teachers simply don't seek contact with their peers; this resistance to joining a team can cause conflict. Kruse and Louis (1995) found dilemmas occurring as part of a set of middle schools' moving toward professional learning communities. In a study of these four middle schools, one dilemma was that the very fact that teacher teams had been formed to collaborate "undermined the ability of the whole faculty to deal with the business of the whole school" (p. 4). Another ironic dilemma was that without the ability to interact with the whole faculty, isolationism was again rearing its head—this time, team isolation rather than individual teacher isolation. Another problem was that of not having a common standard for teacher performance because each team was creating its own. A fourth dilemma was that of team structure and daily time schedule: If teams are discussing during common planning times, those teachers are not able to observe each other in the classroom to discuss instructional practices. Finally, a fifth dilemma was that of perceived "good teams" (p. 5) who were more likely to get money to go to conferences or be included on various committees, so competitiveness was undermining optimal value of teams.

Comparisons. In a general sense, a comparison of different research studies and literature did not show great variance in findings toward the benefits of professional learning communities and the characteristics that comprise those. If anything, studying research and literature led to having to understand how researchers often study just a narrow slice of a characteristic that helps make up a professional learning community yet often mention how that characteristic fits into a broader picture of professional learning community. For example, Lambert (2002), in her focused advocacy of constructivism on the part of leadership, naturally also brought forth the concept of moving away from isolationism in the very act of drawing teachers in to help construct meaning and make decisions. Donaldson (1987), in his studies of effective school leadership and leading learning, naturally also brought forth the concept of leaders collaborating with one another as they try various practices. A comparison and contrast view to the research and literature did surface some different outcomes for forming professional learning community, but overall, the review of the literature was unified in showing patterns in the components needed for creation of professional learning community, no matter how a school might approach development of that community.

Relationship of the Study to Previous Research

This study is related to previous research through solid connections but is also unique in two ways. This study examined the professional learning communities of two high schools, at a point in time three years after their formation, to seek research-based characteristics that were evident. In examining the professional learning communities for the existence or practice of research-based characteristics, the research study is solidly

connected to past research; indeed, the research-based characteristics in Table 1 were drawn from the literature review. One school took the approach called *Learning Model First*, which contains the framework called AIW (Newmann et al., 2007), a learning model piloted across my Midwestern state and not found elsewhere except in a single middle school setting in another Midwestern state (Newmann, personal communication, February 20, 2010). Because this study sought research-based characteristics present in the two professional learning communities, this study is unique and unrelated to previous research.

Literature-Based Description of the Research

Potential Themes and Perceptions Explored

This descriptive case study explored whether *Team Creation First* and *Learning Model First* provided the research-based characteristics of professional learning communities at the high school level. One perception might be that *Learning Model First*, such as when school teams implement AIW (Newmann et al., 2007) through the vision of an innovative leader, may be the more effective method to result in research-based characteristics. The other approach, *Team Creation First*, might offer that a craftsman-constructivist *head learner* (Barth, 1990) could best create the conditions for research-based characteristics to become evident when a faculty forms small learning teams that choose topics to study and form a professional learning community. Both of these perceptions deserved examination and exploration; each approach could have been seen as the "better way" to create the desired results of research-based characteristics of professional learning community. This study, however, did not seek to determine whether

one approach was better or more correct than the other, although findings will naturally move toward that sort of information in section 5. This was a descriptive study that sought to examine research-based characteristics present in two local high school professional learning communities.

Literature Related to the Method

Creswell (2007) named several characteristics of qualitative research. These characteristics include a natural setting, researcher as key instrument, multiple sources of data, inductive data analysis, participants' meanings, emergent design, theoretical lens, interpretive inquiry, and holistic account. Studying how schools implement professional learning communities is a complex issue, and this study therefore, Creswell might say, needed a "*complex*, detailed understanding of the issue" (p. 40). Further, Creswell offered, "the best qualitative studies present themes that explore the shadow side or unusual angles" (p. 46). Exploring concepts of *Learning Model* First or *Team Creation First* may well fit the idea of an "unusual angle" as *Learning Model First*, with its framework of authentic intellectual work (Newmann et al., 2007), had not been explored at all in terms of looking at the results of having taken this approach to creating professional learning community.

To accomplish the goal of the research question, which was that of examining two high schools at a given point in time for evidence of research-based characteristics of professional learning community, I used the case study tradition. In Merriam (2002), "Case study is less of a methodological choice than a 'choice of what is to be studied'" (Stake as cited in Merriam, 2002, p. 178). Merriam defined a qualitative case study as an

"intensive, holistic description and analysis of a single entity, phenomenon, or social unit" (Merriam as cited in Merriam, 2002, p. 205). The intent was to study two high schools for evidence of research-based characteristics, which was the phenomenon being studied, of professional learning community; case study was appropriate here.

A singular strategy was employed in searching the literature regarding methodology. Once I discerned that qualitative research was appropriate for the research question and the in-depth study of professional learning community at two high schools rather than quantitative research, I then began to search qualitative literature for the type of approach I should take. Once I discovered, for example, that Bogdan and Biklen (1992), Merriam (2002), Hatch (2002), Berg (2004), Glesne (2006), McMillan and Schumacher (2006), and Creswell (2007) wrote extensively of the five approaches to qualitative research (narrative, phenomenology, grounded theory, ethnography, and case study), I then discerned, through constant comparison and contrast of those search terms, that case study seemed the most appropriate choice. Once I stood firm on case study, I read all the instances I could, large and small, of the case study examples these authors offered. I stayed open to the possibility that another approach might work well, however.

Literature Related to the Use of Differing Methodologies

It was important to determine whether other qualitative methodologies might have been appropriate as well. Creswell (2007), in his explanation of narrative research, stated, "Narrative research is best for capturing the detailed stories or life experiences or a single life or the lives of a small number of individuals" (p. 55). Although leadership style was one aspect examined in this study of professional learning community, and

although that leader's professional life story might have been telling in the context of building a learning community, that leader's story was not the focal point of my study or research question, so narrative research was not the most beneficial approach.

Similarly, a phenomenological approach had interesting qualitative aspects to it. However, as Creswell (2007) explained, a phenomenological study "describes the meaning for several individuals of their lived experiences of a concept or a phenomenon" (p. 57). So while this research included pieces of lived experiences of several individuals in the schools being studied, gained through interviews, for example, these individuals' lived experiences were still not the focal point; examining the results of having taken certain approaches to developing professional learning community was.

Grounded theory research, as Merriam (2002) explained it, "is the building of substantive theory—theory that emerges from or 'is grounded' in the data" (p. 142). I did not intend to generate a general explanation or theory shaped by the views of the educators in the study; I intended to study the results of the development of professional learning community because of frameworks already in place.

Ethnography was in some ways perhaps closest to the case study I intended to undertake. Bogdan and Biklen (1992), Berg (2004), and Glesne (2006) all described ethnography as speaking to a description of a culture. Merriam (2002) offered, "An ethnographic study is one that focuses on human society with the goal of describing and interpreting the *culture* of a group" (p. 236). Certainly as part of a case study, I describe shared values, behaviors, beliefs, and language I observed. Again, though, in this case study I investigated more aspects than are stated for an ethnography (which studies

people); in this case study I examined professional learning communities and the characteristics that existed in two local schools at a specific time.

Literature Reflection

Literature was abundant in offering ideas of characteristics of professional learning communities and in advocating for creation of these communities in schools, whether these entities are called professional learning communities, professional communities, learning communities, communities of practice, or other similar names. Ample literature provided research on the importance of shared leadership, deliberate moves away from isolation and toward collaborative teaming, and leaders modeling collaboration as key pieces of support in providing successful implementation of professional learning community. Many research studies helped create a common list of research-based characteristics that frame a professional learning community. The literature also pointed to the use of descriptive case study as a sensible method of studying schools in beginning stages of creating communities of learners. In all, the literature laid the foundation for studying two high schools to look for the results of their having implemented professional learning community through one of two different approaches.

Section 3: Research Method

Introduction

This study addressed a local problem: Although local teachers and administrators had begun to realize the advantages to professional learning community over more traditional organizational structure, there were few local contextual experiences in developing communities that contained research-based characteristics. From my observation of local high schools in my Midwestern state and their organizational structures, local high schools undertaking this work of developing professional learning communities had had little contextual or peer guidance. This study offers a detailed view of the presence of research-based characteristics of professional learning community within two local high schools; the study offers contextual experiences that may support schools seeking to build such a community. Walden Institutional Review Board gave approval to this study and assigned approval number 06-02-10-0365953.

This section provides a description of the methods used to gather and analyze data in a case study that sought to gain understanding of the aspects of professional life inside the communities of two different high schools.

Research Design

Naturalistic inquiries are an effective way of investigating the results of professional learning communities, because naturalistic methods have a goal of "capturing naturally occurring activity in natural settings" (Hatch, 2002, p. 26). Examining in depth the results of the creation of a professional learning community, the

research-based characteristics, led toward qualitative research in general and a case study design in particular.

A case study design allowed me to interview teachers and administrators, observe collaborative team meetings, and examine artifacts of practice used in collaborative team meetings such as meeting notes, conversation protocols, or teacher tasks, for example. A case study allowed for an in-depth, close study of all aspects of a phenomenon such as professional learning community, from one-on-one interviews of community members to large-picture perspective of how a professional learning community was operating. Further, using a case study to examine two high schools' newly formed professional learning communities and the research-based characteristics within offers readers of this research study some contextual guidance for decisions about professional learning community.

Selection of and Rationale for Research Tradition

Several qualitative methods offered components that could be valuable in studying the research-based characteristics (Appendix B) of newly formed high school professional learning communities. Grounded theory offers the researcher the chance to build a substantive theory that is grounded in the data collected (Berg, 2004; McMillan & Schumacher, 2006; Merriam, 2002). An ethnography allows a researcher to examine the shared patterns of beliefs, behaviors, and language of a whole cultural group; ethnographers study the meaning of these shared patterns in the cultural group (Berg, 2004; Bogdan & Biklen, 1992; Creswell, 2007; Glesne, 2006). A narrative study allows the researcher to seek and tell the stories of individuals in a given setting; the researcher

analyzes these collected stories (Creswell, 2007) to "unite and give meaning to the data" (Polkinghorne as cited in Hatch, 2002, p. 58). Merriam (2002) stated "A phenomenological study seeks understanding about the essence and underlying structure of the phenomenon" (p. 38). None of these methods, however, aligned as closely to the research problem as did a case study. Indeed, phenomenology came the closest to other possible qualitative methods, yet the action of "developing a composite description" (Moustakas as cited in Creswell, 2007, p. 58) pointed to the ineffectiveness of a phenomenology when a conceptual framework was being studied, as happened in this case study. Creswell (2007) and Dr. Richard Penny of Walden University (personal communication, July 2, 2009) both advised that in a phenomenology, a researcher usually avoids starting with an a priori theoretical viewpoint, and this study did bring to it a conceptual framework as outlined in Table 1.

A case study, which is "an intensive description and analysis of a phenomenon or social unit such as an individual, group, institution, or community" (Merriam, 2002, p. 8), was the best fit for the research question. The cases were the two local high schools with newly formed professional learning communities. I examined each case—each professional learning community at a specific point in time—for evidence of research-based characteristics of such communities as found in Table 1. Each high school had taken a different approach to developing that professional learning community: One school took the approach of having formed collaborative teams first who then decided what to study; and the other school learned the framework called authentic intellectual work (AIW)(Newmann et al., 2007) first from which teams and professional learning

community grew. The approach each took was not examined in this research study; I did examine the results of those approaches.

McMillan and Schumacher (2006) stated that case study can contribute to practice by "provid[ing] detailed descriptions and analyses of particular practices, processes, or events. . . [that can] increase participants' own understanding of a practice to improve that practice" (p. 318). This case study allows examination of the professional learning communities in two local high schools in search of research-based characteristics.

Research Questions

This study sought to answer this central research question: *What research-based characteristics of professional learning community are evident in two local high school professional learning communities, each of which took a different approach to community formation?* Further, the study sought to answer the following subquestions:

1. What leadership style is evident at each school and how does it affect the work of the professional learning community?

2. What is the organizational structure of the school calendar, particularly regarding professional development?

3. What support is evident for professional learning community in each school in terms of infrastructure, district, financial, and attitudinal support?

4. Did this professional learning community establish shared vision, mission, goals, and actions for its work? If so, how have those shared components shaped or driven the work of the educators?

5. What are the expected processes of working within a professional learning community?

6. What are the expectations for the work of the professional learning community?

The central research question and the several subquestions sought evidence of research-based characteristics, which spoke to the purpose of this study; that is, to examine two different high school professional learning communities at a specific point in time to look for research-based characteristics of professional learning communities.

Questions emerged from this case study which will be offered in section 5. This may prompt further study from others on the presence of research-based characteristics of professional learning communities.

Context for the Study

I first became interested in studying professional learning communities because of efforts, and lack of efforts, in local high schools to develop professional community to solve problems, open and share teaching practices, learn together professionally, and help educators come together with a collective purpose of improving education for the benefits of both teachers and students.

Balanced Leadership

Several years ago, many local school leaders and support personnel (myself included) participated in a three-year series of trainings around the framework called Balanced Leadership (Waters et al., 2003). In this framework, participant leaders learned about 21 research-based leadership responsibilities and their 66 associated practices.

Among those practices were the ideas of sharing leadership and working toward collective responsibility for student learning, and part of developing those practices meant learning how to build professional learning community through collaborative educator teaming.

DuFour Approach

I noticed that while several local schools then developed a single building leadership team out of their learning of the leadership responsibilities and practices, many did not know how to build an environment of teacher teams in their schools. As a result, many turned to the work of DuFour and associates, work which advocates forming teams to change the culture of the school. The DuFour resources encourage educators to form teams first and then discuss and choose professional work while seeking answers to four overarching questions: (a) What do we want students to know?, (b) How will we know if they have learned it?, (c) What will we do if they haven't? and (d) What will we do if they have already learned it?

Authentic Intellectual Work (AIW) Approach

Sometime after the Balanced Leadership (Waters et al., 2003) training began in my local area, another professional training opportunity arose. The Department of Education in my Midwestern state had investigated the research of Newmann regarding authentic work and then planned with him and two associates to begin a pilot model in the state, using grant monies the state had garnered. What resulted was called AIW (Newmann et al., 2007), and the state called for high schools to step forward to become part of a pilot. Nine high schools did. Their small teacher teams (some in similar content

areas, some in mixed groups) underwent training that included reading a foundational book authored by Newmann et al. (2007), attending a 2-day kick-off training to learn extensively about the AIW framework, its research base, and protocols for operating within the framework, and then beginning this work back at their schools. The kick-off training was followed by three site visits per year led by a trained coach with a leadership team meeting to debrief the site visit, course correct, and support future planning. Teams were required to meet and undertake work within the framework of AIW between 4 to 6 hours per month to continue to be reimbursed state money for their resource-intense participation in this model. I observed that these schools underwent the AIW training first, and as the teams began and continued the work of the AIW framework, professional learning community with a tight focus seemed to grow.

Interested in Results of Newly Formed Professional Learning Communities

As I observed both kinds of changes in organizational structure happening in local high schools, I became curious as to whether the actual results of those professional learning communities were the same or different, and whether those results had a research base. Did it matter if schools formed teams first who then decided on things to study or if they trained on a model first while forming teams? DuFour materials were well marketed; did the fact that schools chose these materials by which to form teams mean research-based characteristics resulted? Because the AIW model was new to the state (and virtually everywhere else), it was hard to tell if the AIW schools' work, via their implementation of the new framework, was resulting in research-based characteristics, even though Newmann's earlier research supported criteria within the

framework. I wanted to study these results in depth, in each kind of local high school professional learning community.

Details About the Setting

Specifics on the two selected high schools give further context. Pseudonyms are used for each school, as well as for all educator names mentioned at any time. Blue High School (*Team Creation First*) is a comprehensive Grades 10-12 suburban high school located in the Midwest. It serves approximately 1,600 students, with about 10% of students eligible in the district for free and reduced-price lunch. The district's ethnic and racial groups consist of about 94% European American students, with about 2% African American, 2% Asian, and 2% Hispanic. Blue High School has a graduation rate of about 97%. About 84% of students score 20 or above on the ACT, a measure of probable success in postsecondary education, according to ACT (ACT, 2008). About 85% of seniors, in recent data, indicated they plan to pursue postsecondary education.

Green High School (*Learning Model First*) is also a comprehensive Grades 10-12 suburban high school located in the Midwest. Green High School has approximately 1,900 students; about 14% are eligible for free and reduced-price lunch. The ethnic and racial background of Green High School's district shows 85.6% European American students, 4% African American, 4.7% Asian, and 5.5% Hispanic. Green High School has a graduation rate of 93%. About 87% of students score 20 or above on the ACT; about 90% of seniors plan to pursue post-secondary education.

Blue and Green High Schools are similar, demographically. They differed, however, in their approach to creation of professional learning community. In 2007, Blue

High School, through administrative vision and a teacher-led professional development team, chose to study DuFour materials as a team, facilitated learning of DuFour materials with their full staff, gained consensus from the staff, and began collaborative teaming. Also in 2007, Green High School, through a connection made between the state's Department of Education and the high school principal, entered into a pilot program of learning about and implementing the AIW framework (Newmann et al., 2007). Each high school worked steadily at forming professional learning community through their individual approaches.

This situation was the context for this case study. I began reading as much as I could about professional learning communities in order to understand the research base. Observing these local schools' professional learning communities was what led to my interest in formally studying them in a case study to seek the presence of research-based characteristics.

Measures for Ethical Protection of Participants

I took steps to protect ethically all participants (teachers and administrators) and processes during this case study. First, through e-mail I gave participants detailed research agreements and informed consent documents (Appendices C and D) that outlined the purpose of the study, the specifics of how the participants were to be involved in the research, the fact that participation was voluntary from start to finish, the commitment to confidentiality, and how participants were to be informed of the finalized report by the researcher. Through continued e-mail correspondence, I then invited any questions potential participants had before asking for their signed consent forms; I did

offer, as well, to meet face-to-face with any participant who preferred to ask questions of me directly before deciding whether to consent. None asked for this. Before actual interviews, I again informed participants of the voluntary nature of their participation. Another ethical protection offered the participants was that I committed to not discussing with the building principal individual comments made by teachers. All school and educator names in this study are pseudonyms. Names of teams were content-area specific so they were left actual names.

To gain access to participants, I followed a structured process. First, I obtained written permission of each district to conduct the research. I then followed the process of working with the principal of each high school to identify possible educators who might participate. From that meeting I created a pool of possible participants. I then distributed electronically Research Agreement Information sheets (Appendix C) and Informed Consent Forms for Participation in a Research Study (Appendix D) to eligible educators in individual e-mails with no notification to building principals. I then awaited notification from teachers and administrators who were interested in being part of the research study. One by one, as I gathered their signed informed consent forms, I answered any questions they had (there was only one question among all of them), and then we scheduled a date, time, and place for the interview, or in the case of a team observation, a date, time, and place for my observing their team at work and then asking for artifacts upon completion of the team observation. There were three interviewees who needed to move their appointed interview time, which was no trouble. A more detailed discussion on educator participation follows in section 4.

The Role of the Researcher

It was important to consider my role in my work position and the two high schools I studied. The high schools were two that I support through my work as a professional learning & leadership consultant at River Valley Education Agency (pseudonym). In order to clarify my role in doing a research study with schools I support and with which I am familiar through my work, following is a description of my place of employment as well as my role with these two high schools, with comments after that.

Description of Researcher's Employer

River Valley is a mid-level state educational agency, one of nine in my Midwestern state. I am a state employee, not an employee of any public or private district or school. River Valley Education Agency works in partnership with public and accredited private schools to provide educational services, programs, and resources for improving student achievement and building cultural competence through serving preschool children, K-12 students, families, educators, and sometimes entire communities.

Upon becoming employed at River Valley, professional learning & leadership consultants, such as myself, receive extensive and ongoing training in how to offer direct support to schools and districts without becoming subjectively involved in their leadership or educational programs. Key to River Valley training is learning how to listen well, being fully present to educators in all ways, asking the right questions at the right times, being a critical friend, facilitating learning, offering resources, helping educators look at data, sitting side by side with them as they plan, supporting them as

they build capacity in their efforts, and observing processes objectively in order to help educators decide what next steps are right for them.

As I learned when training for my position, it is not my job to lead schools' educators where I think they should go; it is my job to support them in their decisions and then work side-by-side with them as they read, research, discuss, try, fail, try again, discuss some more, and find success.

I had worked extensively with each high school in this research study. Over my several years of employment at River Valley Educational Agency, and in supporting these two high schools, I had formed solid, appropriate relationships with administrators and teachers at each school and had established relational trust that I felt worked positively as I interviewed and observed during this qualitative research. In earlier years I supported Blue High School when they had discerned that they wished to read and view DuFour literature and form collaborative teams who would then decide topics to study; in the past I had attended many meetings of these teams in support. I also supported Green High School when they adopted a learning model called AIW (Newmann et al., 2007) and continued to support them in all their AIW and team meetings, including receiving coaching training. Both of these types of active support are a natural part of my job at River Valley Educational Agency. I did keep at the forefront of my research thinking and actions, however, that while I had one type of relationship as a support person, I was now stepping into the role of a researcher and raised awareness of that to all educators in the high schools throughout the study so that all roles were clear.

Biases to the Topic

My biases related to the topic were few but important to mention. While I think DuFour materials are well written and convincing in their advocacy for schools to form professional learning communities, I believe they are also well marketed and appealing in their advertisements to buy the books or buy and view the DVDs or attend the national conferences. I was not convinced that by reading and applying DuFour information schools would form professional learning communities with research-based characteristics; this lack of conviction on my part was why I wished to study this phenomenon. By the same token, I did not know if schools working within the AIW framework formed professional learning communities containing research-based characteristics either. Again, these reasons were why I wished to study these communities in depth.

Selection of Participants

I sought and was granted written permission from each of the two separate districts to study the two high schools and gain access to the teachers and administrators. I used purposeful sampling to select willing members of each staff to work with in this study; these willing members came from the teaching staff as well as from the administrative staff. As McMillan and Schumacher (2006) proposed, based on my knowledge of the population and in conjunction with each building principal, I looked for participants who could provide "the best information to address the purpose of the research" (p. 126).

Selection of Educators to Interview

I worked with each building principal to select educators for interviews. To do this, I looked for participants who were the most knowledgeable on staff, either as a teacher or as an administrator, about their professional learning community; who had been at the school and part of the professional learning community for at least one full school year; who were willing to participate; who had a reputation for candor; and who were certified as a teacher or administrator. These criteria applied to both the pool of eligible teachers and eligible administrators from whom I drew three teachers and two administrators in each setting. I allowed the principal to determine who were the most appropriate members of the staff according to the criteria. Though the numbers chosen for the study seem small, McMillan and Schumacher (2006) stated, "While there are statistical rules for probability sample size, there are only guidelines for purposeful sample size. Thus, purposeful samples can range from 1 to 40 or more" (p. 321).

Once identified, I then connected with the eligible educators by a detailed e-mail message to invite them to be part of my study. That e-mail contained both my research agreement (Appendix C) and informed consent form (Appendix D). I ensured all participants knew their participation was voluntary, and I ensured this again with verbal clarification at the start of each interview.

Selection of Teams to Observe

The building administrator at each site and I also worked together to plan for my observation of teacher collaborative team meetings, again, if the participants in the teams were willing to be observed. While I asked the building administrators to select teams

according to desired criteria, in no way was that process meant to imply that the participants would be forced to participate. In selecting the collaborative teams to observe, I again took care to ensure, and not assume, all participants knew their participation was voluntary from start to finish and that they would each be offered research agreements (Appendix C) and formal informed consent forms (Appendix D) at the start along with verbal clarification at the start of each observation. In terms of selecting participants, Creswell (2007) advocated that the "inquirer selects [sic] individuals. . . for study because they can purposefully inform an understanding of the research problem and central phenomenon in the study" (p. 125). So again, I gave several criteria to each building principal to select willing participants on teams: (a) they were the most knowledgeable on staff, either as a teacher or as an administrator, about their professional learning community; (b) they had been at the school and part of the professional learning community for at least one full school year; (c) they were willing to participate and be observed; (d) they had a reputation for candor; and (e) they were certified as a teacher or administrator.

Further Clarification and Justification of Selection of Participants

Further clarification regarding interviewing knowledgeable participants and observing collaborative teams: Some of the three teachers and two administrators interviewed at each site were only coincidentally part of the collaborative teams I observed. That circumstance was clarified for all eligible participants from the start. I informed the principal in each high school that if the three teachers and two administrators drawn from the eligibility pool did not provide me with enough detailed

information to my questions in interviews, I would continue to interview eligible participants to gather enough in-depth information. This did not end up being the case; I did gather enough information from those who consented to interviews. I believed the number of interviewees at each site—three teachers and two administrators—was balanced with depth of inquiry. Interviews lasted an average of 75 minutes; one was just 58 minutes but three were 90 minutes. Most lasted about 75 to 80 minutes. All designated interview questions (Appendix A) were asked in each interview; most of the designated follow-up questions were asked as well. Many new follow-up questions were asked as the conversation warranted; I followed the direction of the interviewees' responses to probe as deeply as I could into the main topic of the interview questions, which were connected directly to my research questions.

Again, I worked with the building administrator to identify eligible collaborative teams for observation. While several eligible teams were identified, I again reserved the possibility of identifying more in case that was needed, which was not the case. From the start, several teams met the criteria I gave the principals; we worked to put them in priority order for those two teams at each site that were the most actively engaged and who contained members who exhibited the most knowledge about their school's professional learning community. The collaborative teams observed from Blue High School had nine and four participants each, respectively, and the teams from Green High School had five and four participants each, respectively. Each team's observed collaborative time lasted an average of 65 to 70 minutes; one team met for 110 minutes,

another for 77 minutes, and the other two met for about 60 minutes. Again, the number of teams observed balanced with depth of inquiry into their work.

Data Collection Procedures and Rationale

Interviews

I interviewed 10 individuals total over a 4-month period, between June and September 2010. The interviews consisted of 10 main questions with designated appropriate follow-up questions and prompts as well as multiple impromptu questions based on the flow of the conversation. The questions captured participants' perspectives on such things as the role of leadership and leadership style on professional learning community, infrastructure supports, and what collaborative teams' work looks and sounds like. Also, the questions elicited information on what materials might be brought or discussed at team meetings, collegial relationships, and whether there were changes in instruction or teacher preparation as a result of team work. The interview guide, which I created, can be found in Appendix A. I created the interview guide because there were no existing interview guides appropriate for my local situation, considering my research questions. The interview questions were appropriate because they reflected and connected to my research question and subquestions. Before using the interview guide, I field tested the interview questions to ensure clarity by giving the questions to a colleague not in the study.

I met with educators at their location of choice; all encounters were at the schools at which they work, in a classroom or other room that was relatively quiet since I audio recorded each interview in order to transcribe later. I tested the audio equipment each

time before we began; each interview session was completed cleanly the first time through. During each interview I did take some handwritten notes throughout the process, but I kept the notes few as I preferred to focus on the conversation between the participant and me and let the audio equipment take care of the recording. I reminded each participant of the voluntary nature of participation before we started. No one besides the participant and myself was present at any of the interviews.

Observations of Team Meetings

The purpose of observing collaborative teams at work was to capture the conversation and actions of teams in a professional learning community setting and seek research-based characteristics of such communities. I observed four collaborative team meetings over a 4-month period, from June through September 2010. I observed one collaborative team two weeks after students had left for the summer, in June 2010, as these educators wished to meet as an end to their school year. Three more teams I observed in their scheduled collaborative team times at the start of the 2010-2011 school year. For each team observation, and at a prearranged time, I went to the appropriate high school to the designated team location, which was a classroom in each case. I set up my audio recording equipment—a transcriber machine and a large table microphone—in the middle of the small gathering of each several-member team. I checked the audio at the start of three team observation times; each of these team work sessions was recorded completely cleanly in one session. A fourth session was inadvertently not captured on audio cassette tape because of a dead battery in the microphone; however, I took nine pages of notes, thinking ahead to the difficulty of transcription of the session with nine

voices emanating from the team. Also, I did video record the session, which I checked against coding of my notes. At the start of each team observation, I informed each group that only I would use the audio and visual recordings, and for the purpose of analysis only; no one else would see or hear these recordings except my assistant transcriber. I also reminded each member of the voluntary nature of the participation.

As I observed, I used the team meeting observation guide, as intended, found in Appendix E. I created this observation guide because there were not existing observation guides appropriate for my local situation, considering my research questions and the fact I desired to observe team meetings within two different professional learning communities. I created the observation guide based on training I received as a school building administrator in order to note several things: the configuration and use of the physical space by the team members; the time taken for various activities; the activities themselves; and specifically to this study, the research-based characteristics of professional learning communities that were evident in the team meeting.

Examination of Artifacts

Over the same period of time as interviews and team observations, four months between June and September 2010, I gathered artifacts of teamwork from each of four teams. To obtain these artifacts, I asked each team for a copy of each artifact or document they actually worked with at the meeting I observed, as well as any other artifacts that demonstrate the work they do in their meetings. In addition, one teacher I interviewed, as a natural part of her answers to my questions, showed me a program in her laptop computer that she accesses each time she attends her team meetings. She later

forwarded me a team agenda she had referred to; she also told me the categories of electronic gathering folders her team used for the documents they discussed at team meetings.

Among the interviews and team observations, I gathered the following from Blue High School (*Team Creation First*): three team agendas, one each for a math team, a music team, and an English team. I gathered an electronic copy of a math exam. As well, while I did not gather actual papers, I gathered electronic category names of the computer desktop folders teachers worked from during their team meetings: minutes; agendas; Boolean logic; note taking; PLC research paper; TKAM nonfiction; final exam dump. I examined the following from Green High School (*Learning Model First*): two teacher tasks, one of which was a project sheet for a psychology class, and the other of which was a segment of a shared multiple choice test; two related score charts showing the scores team members gave as they assessed the tasks against AIW standards rubrics; one stapled packet of teacher task and associated student work that had been scored in the past; one stapled packet of a team member's notes from scripting, scoring, and discussing observed instruction of a colleague from the past; one AIW foundational-information book; and one AIW scoring manual for scoring teacher tasks, student work, or instruction against standards.

Data collected from interviews, collaborative team meetings, and from examination of team artifacts were appropriate to answer the principal research question of seeking research-based characteristics in professional learning communities. Answering that central research question was, in turn, appropriate to a qualitative case

study. These data were key to discerning research-based characteristics present in the professional learning communities of two local high schools.

Data Analysis

The typologies in this study are the 10 research-based characteristics of professional learning communities. Data analysis followed an organized, structured method.

Beginning Data Analysis

Analysis took place beginning with the first data gathering, which happened to be interviews at each site. I audio recorded each interview to capture the actual conversations; during the interview I took brief, handwritten notes that accompanied each interview's transcribed notes. I performed interim analysis (McMillan & Schumacher, 2006), a process within case study qualitative data analysis, when I began to analyze data during data collection, not waiting till afterwards. This included writing many observer comments in the field notes to identify patterns, interpretations, or questions; it also included writing brief summaries of observations and interviews.

As well, I self-reflectively memoed (Berg, 2004; Bogdan & Biklen, 1992; Creswell, 2007; Glesne, 2006; Hatch, 2002) throughout the study to document personal reaction to participants' interviews and collaborative team actions as well as make connections and simply make sense of the data. Self-memos were kept apart from field observation notes.

Recording, Transcribing, Coding, and Analysis

Interviews were recorded and then transcribed immediately onto a self-created standardized transcript template (Appendix F). Once team work sessions were recorded, I transcribed those as well using the same transcript template. A sample transcript segment appears in Appendix G. I observed team work session video recordings for nonverbal language and cues as needed; I had taken handwritten notes during each opportunity such that I needed to peruse only one team's recorded session briefly to confirm an exchange.

Transcriptions were then coded as soon as possible to ensure freshness of memory and to check against handwritten notes. Coding was done according to the identified research-based characteristics (Appendix H), as were the artifacts and documents gathered. A sample coded transcription segment appears in Appendix I.

I looked for connections to the research-based characteristics in the responses to the interview questions in the coded data regarding the central research question. As well, I looked for connections to the characteristics in my field notes and transcriptions after I observed team meetings; I also sought possible connections to the characteristics from notes and coding upon artifact examination. I looked at my interim analysis notes and synthesized these notes with the coded data from the interviews, observations, and artifact examination. Upon finding connections to the characteristics between and among all data, I then articulated these as one-sentence generalizations (Hatch, 2002) to move toward solid analysis of just what research-based characteristics were present in each professional learning community. I used these one-sentence generalizations to clarify my

thinking on what I was understanding from the data from interviews, team observation sessions, and examination of artifacts with regard to the characteristics of professional learning communities. For example, I heard in all interviews at Blue High School that teachers, in 2009-2010, met at least two times per month in collaborative teams for shared planning, and up to three times per week in 2010-2011, so I coded that appropriately from the transcriptions as *ActSharPPP* (educator actions based on shared purpose, planning, and preparation) and *frqint.ed* (frequent interaction among educators). I saw this same information in the agendas of three teams at Blue High School. A one-sentence generalization I made was this: *At Blue High School, all of the interviewed educators, and Geometry PLC's and Music PLC's agendas, indicated teachers meet at least once weekly for at least 45 minutes, more often for 70 minutes, in sessions that indicate shared planning.* These one-sentence generalizations then served as building blocks to create a full picture of what I saw within the professional learning community of Blue High School.

Finally, after using within-case analysis, I employed a cross-case analysis of these two cases, which I called a comparison of Case 1 to Case 2. Creswell (2007) describes this: "When multiple cases are chosen, a typical format is to first provide a detailed description of each case and themes within each case, called a *within-case analysis*, followed by a thematic analysis across the cases, called a *cross-case analysis*" (p. 75). Through a matrix format, I crossed categories from the two cases to generate new ideas or insights for further data analysis, specifically that of strength or weakness of evidence of certain characteristics. These also revealed discrepancies and questions, part of

another analytical strategy, which will be described, analyzed, and presented in sections 4 and 5.

My job, in case study, was to "make a detailed description of the case and its setting" (Creswell, 2007, p. 163) including "the facts" (p. 163), and these emerged from the details seen in the clustered categories of data answering the research question. The purpose behind searching for connections and generalizations that emerged from the data was to seek descriptive answers as to which research-based characteristics were present in the professional learning communities of these two local high schools that each took a different approach in forming those communities. Glesne (2006) offered, "If several cases are studied, each is written up into a context-situated case study" (p. 13). This study, with its central research question the basis for the study at each case, provides context for readers who might wonder if one approach or the other is better for them as they make decisions on how or whether to develop a professional learning community.

Methods to Address Trustworthiness of the Data

Creswell (2003, 2007), in his analysis of the many studies on the importance of establishing validity or trustworthiness of a qualitative study (2007, pp. 202-206), made several points to summarize these views. Fundamentally, he advocated researchers to "employ accepted strategies to document the 'accuracy' of their studies" (2007, p. 207). Glesne (2006) and McMillan and Schumacher (2006) concurred. I adhered to three appropriate and specific trustworthiness strategies in this case study: I triangulated data (Berg, 2004; Glesne, 2006; Hatch, 2002; McMillan & Schumacher, 2006; Merriam, 2002), I used member checking (Glesne, 2006; Hatch, 2002; Merriam, 2002) at each site,

and I used rich, thick description (Berg, 2004; Creswell, 2007; Dana & Yendol-Hoppey, 2009; Merriam, 2002; Rubin & Rubin, 2005) to convey findings, found in sections 4 and 5.

Triangulation of data indicates "cross-validation among data sources [and] data collection strategies" (McMillan & Schumacher, 2006, p. 374). I triangulated data by interviewing, observing, and examining documents. Member checking means "verification or extension of information developed by the researcher" (Hatch, 2002, p. 92). I member checked, through e-mail, at each site at different points of data analysis to be sure of the accuracy of my data gathering. Rich, thick description includes using "as much texture, sensation, color, and minutia as your memory permits" (Berg, 2004, p. 174) when writing. I used robust, descriptive writing to convey findings found in sections 4 and 5; this type of writing is that which "presents detail, context, emotion, and the webs of social relationships . . . [and in which] the voices, feelings, actions, and meanings of interacting individuals are heard (Denzin as cited in Creswell, 2007, p. 194). As Berg (2004) noted, "Detailed descriptions are the heart of any narrative field notes" (p. 174). By aggressively addressing methods of trustworthiness of the data, the potential issue of validity of qualitative research over quantitative research has been met squarely.

Section 4: Results

Data Gathering Process

I generated data by interviewing educators, observing teacher teams at work, and examining artifacts generated from the teacher teams at work. At the start of each research event, I alerted each participant to the voluntary nature of participation and at the end told them that I might need to return to them for additional information or member checking should those be warranted after transcription, coding, and analysis.

In addition, at the start of interviews with each interviewee, to ensure clear understanding of terminology as we were about to discuss their teams and their professional learning community, I asked, “In this school, what term or terms do you use when speaking of your community?” I was searching for common terms so I could make the language of the interviews easily understood by both the interviewee and myself. At Blue High School, all participants answered that they refer to their small collaborative teams as “PLCs” (for professional learning communities). PLCs is therefore the term I use in my analysis and discussion about the teams of Blue High School. As it seemed to be referred to most often, “AIW teams” is the term I use in this study to designate small Green High School teams. Because the detail of some interviewees’ answers to this terminology prompt took turns I had not expected, I made some recommendations based on the lengthier versions of these answers; these recommendations will be found in section 5.

After interviewing and observing, my transcribing assistant and I transcribed each interview and team observation immediately and then I coded those. I also examined and

coded artifacts as soon as possible after observing a team. Again, transcription and coding was completed within two days after the actual event. I interviewed three teachers and two administrators from Blue High School. I interviewed three teachers and one administrator from Green High School as well as one administrator from the district office of Green High School. The intent of these interviews was to capture participants' detailed knowledge about the work going on in the professional learning community of each high school. In each of the interviews, I gathered data by asking each participant 10 basic questions (Appendix A) with several prompts and follow-up questions as answers warranted in order to seek details and specific answers. I recorded each interview with a transcriber cassette machine and table microphone; I took written notes as well. Again, of the 10 interviews, the average length was about 65 to 70 minutes. Several participants took comfortable liberty in extending answers as they saw fit during the interviews; one shorter interview seemed to be a result of the participant answering what she was asked for each main question and each prompt and stopping until she was asked another question. Her answers were readily offered and well detailed, nevertheless; there did not appear to be hesitancy in answering the questions. Once I interviewed a participant, I (or my assistant for transcribing) then transcribed it as quickly and accurately as possible. I then coded each transcription by marking in a large right margin which research-based characteristics I found (Appendix I) while comparing the transcription to the notes I took by hand during the interview to cross check. I coded by marking and circling each characteristic I found while making other notes in the margin, uncircled, to separate those

notes from the actual characteristics I found. I did this in every piece I coded, whether interview, team observation, or artifact examination.

I also observed four teacher teams at work in their respective professional learning communities (two teams in each high school). When I observed teacher teams at a work session, I video recorded the meetings, in order later to observe body language. I also had a table microphone set up for audio recording to capture all the various voices, all of which I alerted the team members to. I did not participate; I sat on the periphery of the team. Using the guide for team meeting observation (Appendix E), I scripted the meeting, taking notes and direct quotations as often as possible. I noted physical layout of the space and the team tables or desks as well as noting what the team members were discussing, and whether they were handling artifacts, and what types of artifacts, as they discussed and worked. Once finished with observing, I asked for copies of any artifacts they had worked with during the meeting, if I was not given them before or during the meeting, or any other type of teamwork artifact. I then transcribed the meeting as quickly as I could afterwards, and then coded the transcription after that. I used the video recording as needed to verify any nonverbal cues I wanted to remember although I also noted those in my handwritten notes as I observed. One team meeting lasted one hour; one lasted two hours, another lasted one hour 18 minutes, and the fourth lasted 58 minutes. The lengths of team meetings were adequate to allow me a full sense of what the work of each team was when I observed. After coding the team session transcription, I then coded the artifacts in the same manner I coded the interviews or observations.

Data Tracking Systems

I used a systematic approach to tracking data. Using a research log, I noted when participants were first contacted and invited via the research agreement (Appendix C) and the informed consent form (Appendix D). Upon the return of signed Informed Consent Forms, I electronically entered all those into a computer file. I also noted on the research log the date when the interview or team observation was complete. On my standardized transcript template (Appendix F), I stated the name of participant, date, and place of the interview or team observation as well as the date of the transcription.

When coding a transcribed interview or team observation situation, I kept handwritten notes in the margin of documents. When noting research-based characteristics, I deliberately circled characteristics when I captured them but did not circle any other type of comments I happened to note. I did make comments other than capturing research-based characteristics, such as the flow of the conversation or topics in general, to keep my thinking structured and focused.

Findings

Restatement of Research Problem and Design Chosen.

The problem encountered was that local high schools had few contextual experiences or peer guidance when deciding whether to move from a traditional organizational structure to professional learning community. Further, it was unknown whether the approach undertaken by a school to form that professional learning community would result in the presence of research-based characteristics. This study sought solutions to that problem.

Seeking the presence of research-based characteristics led to in-depth examination of two local professional learning communities at a specific point in time, about three years after the beginning formation of each of those professional learning communities. This in-depth look led toward qualitative research in general and a case study design in particular. Case study design allowed me to interview teachers and administrators, observe collaborative teams at work, and examine artifacts of practice used in team work sessions.

This is a case study involving two high schools. The cases are the professional learning communities of each high school. I organized my findings around a within-case analysis of each high school's professional learning community, including findings for each of the research questions for each school, and concluded with a comparison of the two professional learning communities. I will first present findings from Blue High School and then from Green High School with general summary statements at the end of each case. After the within-case analyses, I will present a comparison of the findings from both schools.

Analysis of Case 1: Blue High School

I gathered data on the research-based characteristics of the professional learning community at Blue High School. I gathered data through interviews with five educators from Blue High School for their individual views on their professional learning community, through my observation of two teams of teachers at one of their designated work sessions, and through team session artifacts given me during or after observation. (As a reminder, *Blue High School* is a pseudonym, as are all school and educator names.)

One team consisted of nine teachers; the other consisted of four. In this section, I will state how my central research question and related subquestions were answered by responses from Blue High School educator interviews, observation of team work sessions, and artifacts examined.

Central research question: Research-based characteristics present. My central research question asked the following: *What research-based characteristics of professional learning communities are evident in two local high school professional learning communities, each of which took a different approach to community formation?* Answers to the main interview questions, follow-up questions and prompts, as well as collaborative team work sessions and artifacts examined, indicated that all 10 characteristics (Appendix B) were present in the professional learning community of Blue High School, although there were varying degrees of strength or weakness of connection behind each. What follows is a breakdown of each research subquestion to show how participant data corresponded to the central question. I discuss discrepant data, patterns, relationships, and themes following this portion of the findings.

Subquestion 1: What leadership style is evident at Blue High School and how does it affect the work of the professional learning community? Shared leadership was strongly evident at Blue High School when I examined data from the interviews of five educators. Principal Jeanie was perceived by the participants to hold core beliefs and a vision for the direction of the school and to lead staff collaboratively to embrace and work toward fulfillment of those beliefs. Teacher interviewees responded, “[Jeanie] has worked hard to develop a shared vision of where the school will be,” “all decisions. . .

have a lot of collaboration brought into [them]" and "she is the most hands-off principal I've ever worked with" (as the teacher compared her to previous "top down" building principals in her experience). Another interviewee stated Jeanie is a "hands-on delegator"; this person clarified the comment by saying, "She has delegated [leadership] much more than what has been [done] in the past. . . . She still knows these are the core beliefs, and now with these groups [PLCs], each group's going to take it [leadership]."

All participants responded that Jeanie models collaboration and shared decision making within her own administrative team. She refers to her four team members as "principals" of the school, not assistant or associate principals. Each principal is responsible for helping guide, support, and coach certain content area teachers (about a fifth of the faculty) in their PLC work as well as in many other facets of their educational program. She refers to herself, verbally in introductions as well as in written signatures, as the "head learner" of Blue High School and models that active learning in meetings and PLC work sessions she attends. Jeanie also commented that she believes in shared, collaborative leadership to the point of collaborating with teacher leaders as they make decisions, but also allowing them to make mistakes as they learn and grow. Yet she remains the visionary leader. For example, in one instance a teacher leader was not responding to the vision of a collaborative professional learning community, despite nudging, coaching, and opportunities to fail then grow from mistakes made. Jeanie said, "I had been pushing the notion of professional learning community and finally. . . [I] had to just sort of say we're moving forward because that person was dragging their heels." Jeanie stated that collaborative leadership can "backfire" sometimes. When I pressed her

on use of the word *backfire*, as it can imply a fatal aspect, Jeanie responded, “No, you just regroup and look at other ways to make things happen.” She went on, “We knew PLCs were the right vehicle to get us where we needed to be in our conversation about student achievement, so we just kept pushing.” While Jeanie termed her own leadership style “collaborative,” she also stated, “There are people who still want, believe it or not, someone to be the boss rather than the leader.” One interviewee, however, replied that Jeanie’s shared leadership style empowers teachers to take chances with what they want to do in their PLC work. I would term her leadership style as that of *craftsman-constructivist*, as defined in section 1: “empathetic and effective developers of people” (Sergiovanni, 2005, p. 164) who practice “reciprocal processes that enable participants in an educational community to construct meanings that lead toward a shared purpose of schooling” (Lambert et al., as cited in Lambert, 2003b, p. 423). Jeanie purposely worked to develop teacher leaders using various methods to draw them into sharing leadership with her. She created the conditions that enabled teachers and co-administrators to move toward a consistent shared vision.

Participants’ answers spoke directly to the research-based characteristics of *shared decision making, workplace relationships promoting collegial work, inquiry-driven interaction,* and *educator actions based on shared purpose*. Answers were detailed enough to state that Blue High School’s professional learning community shows evidence of these four characteristics.

Subquestion 2: What is the organizational structure of the school calendar, particularly regarding professional development? I drew data for this subquestion from

participant interviews and artifacts. Blue High School's professional development calendar, emanating from the district professional development calendar, allowed the staff to demonstrate three more research-based characteristics of professional learning community: *frequent interaction; job-embedded interaction;* and *ongoing interaction*. While team agenda artifacts held the current date of a meeting, the agendas did not offer evidence for structure of the school calendar, so I did examine the professional development calendar of both the district and Blue High school (Appendix J). Each Wednesday of every month of the school year was designated for professional development during a "late start" time, although this precise time slot was not named on the calendars.

Among all participants interviewed, all answers were consistent regarding the frequency of PLC meetings, although one teacher displayed some confusion as to how the PLC time might be changing slightly moving from 2009-2010 into 2010-2011.

As evidenced by interviewee answers, the calendar for professional development allowed for team interaction every Wednesday morning from 7:50 to 9:05. Therefore 75 minutes were expected as indicated by participant answers for team work sessions. The meetings had a different use each time. Faculty members engaged in PLC team work on first and third Wednesday mornings. They engaged in district-directed professional development on second Wednesdays. For example, district personnel offered "strategies that teachers can use within their classroom or their PLC," stated Mike, an administrator. The fourth Wednesday was set aside for school building-specific professional development. When I asked for clarity on this fourth Wednesday work, Mike replied,

“The fourth Wednesday is set aside for [school] building professional development with the idea that building professional development somehow furthers either the district professional development or the work of the PLCs.” I asked interviewees whether teams really took the 75 minutes of these Wednesday mornings, or were there off-task actions during this time. Participants answered that generally, their teams took the full time to work as indicated on their agendas, which they had to submit to their principal before the session. It is unknown if every PLC takes the full 75 minutes each Wednesday morning, because not all PLC members were interviewed, but I gathered evidence from participant interviews that at least three PLCs do. Jeanie and Mike, the two administrators interviewed, also indicated that they believe, based on drop-in walks on Wednesday morning, that a strong majority of PLCs were doing expected work during their allotted time. Each participant was also asked whether there was PLC time outside of these designated Wednesday time slots; each responded that there had been scheduled professional development half days or full days throughout a school year but that time was not used for PLC work in the same manner that Wednesday morning PLC time was. Time was used for outside speakers to speak to entire faculties or for the district to lead learning. In addition, Mike, the associate principal, had constructed a master schedule for the first time that allowed teachers in PLCs within a department to have common planning time for continued PLC work; this is explained more thoroughly in the next subquestion. PLC time, as indicated by participant answers and on PLC agendas, was within the contracted workday, so educator interaction was also job embedded.

It seemed that weekly participation in PLC work, along with daily common planning periods, constituted *frequent interaction*. Participant answers and artifacts showed a direct connection to the presence of research-based characteristics of *frequent interaction* and *job-embedded interaction*.

Subquestion 3: What support is evident for professional learning community in Blue High School in terms of infrastructure, district, financial, and attitudinal support? I drew data for this subquestion from participant interviews and team observations. Blue High School showed evidence of infrastructure support. All participants, in describing their team work sessions, indicated that, starting in 2010-2011, teachers are not only in PLCs for team work on late-start Wednesday mornings, but they are also in like-course teams during common planning periods to continue their PLC work. Mike, a Blue High School associate principal, created a master teaching schedule that, for the first time, deliberately put PLC team teachers together during common planning periods (Appendix K). A new schedule was a significant move away from prior master schedules and involved much intricate work in making sure students still have access to courses they needed but that a number of teachers who teach Grade 10 Language Arts, for example, have common planning periods to continue their Grade 10 PLC discussions. Regarding this new move in 2010-2011, one teacher explained that while she misses having a traditional planning period, she really enjoys the additional, beneficial PLC time with colleagues.

Continual calendar adjustments showed evidence of support for ongoing interaction among educators at this school. There was a sense, from all participant

responses, as well as from within the PLC work sessions, of moving forward with this work in a "continuous improvement" stance, year to year, rather than this work ending at a particular time.

Additional infrastructure support was demonstrated when Blue High School gradually adjusted its daily bell schedule over time to promote better conditions for learning for both students and teachers. A brief history, as explained by Jeanie, the principal, showed that first, Blue High School adjusted its bell time in 2005-2006 when it added minutes to its student instructional time, moving from 42 to 45 minutes per class period. Then their district moved away from their dual transportation system and, wanting to reflect research they were reading, changed young students' daily schedules to an earlier start time and older high school students' start time to later. High school students' start time had been 7:55 a.m.; it was then changed to 8:25 a.m. The school day moved to 8:25 to 3:30 for students, with teachers starting at 7:50 a.m. Next, Blue High School, under Jeanie's leadership, had investigated PLCs through the DuFour materials and processes, and petitioned for Wednesday late starts weekly to build in PLC team time. Then, as the district brought in new personnel and structure to their central office, these new central office curriculum people took the lead on refiguring school calendars and schedules to accommodate PLC time for the district. The Board of the Blue High School district approved Wednesday late start times in 2008-2009. PLC teams then began meeting in 2009-2010 and continued into 2010-2011, the point at which this study was done. Blue High School's student contact time, in 2010-2011, is from 8:25 to 3:30. Teachers' contract day is from 7:50 to 3:50. The shift to substantial teacher contract

time, in part to accommodate lengthy PLC team work sessions weekly, showed infrastructure support for professional learning community.

Blue High School showed financial support for their PLC work. Jeanie, the principal, stated:

> Wednesday late starts funded by the district is a huge financial support for us. In addition, we were able to send some of our staff to [a] Rick DuFour conference for further learning. Much of our Teacher Quality money for TQ Day and TQ University supports the work of the PLCs. If there is further need for research, extra time to work together, etc., we fund that as well with building money.

(Teacher Quality money was supplied by the state to support improvements in teacher quality to meet requirements of No Child Left Behind.) Other substantial financial support came in the form of the district of Blue High School moving to integrating instructional coaches into all elementary, middle, and high schools. Jeanie explained that these instructional coaches come in to work with different PLC teams on Wednesday mornings. She stated there is significant resource support from the district's curriculum department in terms of coordinators in reading, math, and literacy who work with teachers as well as 12 instructional coaches, several of which work directly with the PLCs at Blue High School.

Besides financial and infrastructural support from the district, Blue High School also had worked side-by-side with their district in the formation of PLCs in the 10 other buildings. Blue High School, through the collaborative process first envisioned by Jeanie, other Blue High School principals, and teacher leaders, led the district in studying

the literature and viewing DVDs of DuFour in 2007, taking first steps, and then forming their current PLCs in 2008. New personnel and structures at the central office allowed for talk of professional learning communities for all buildings, watching Blue High School. The district itself, in 2009, led the rest of the school buildings (and Blue High School, again) in studying DuFour and forming PLCs. In some ways, this district-led effort led to frustration on the part of the staff of Blue High School, as the district caused Blue High School to view and study the same DuFour DVDs and other materials they had already studied. Jeanie and the other principals continued to urge patience and encourage collaborative work of staff. Overall, Blue High School not only had the support of the district, the district had looked to Blue High School in some ways to help lead district leaders and model collaborative teams inside a professional learning community for all district educators to see.

Blue High School had attitudinal support from within the staff. All five interviewees enthusiastically offered positive, realistic remarks about the work of the PLCs and administrative support that encourages PLC teacher leadership while not glossing over shortcomings. One participant stated:

> Jeanie is focused on the student first in every way. . . . Everyone who's working with her is always thinking about the impact on student learning first and foremost, not what makes our life easier or the way we've always done it. . . . The fact that we really do try to put the students first all the time has forced an openness that sounds contradictory but. . . if we really do focus on the student learning, then the other things will eventually sort [themselves] out.

This same participant conceded, “Jeanie said from the beginning that this was going to be a collaborative decision-making process even though it is not always the fastest or most efficient.”

Another participant stated that her department had initially not created anything in common, such as a common assessment, as other departments had. They realized other teams, such as math, in fact had been giving common assessments for the three years she had been at Blue High School, but that her department “had been a little scattered.” So her department, in 2009-2010, created their first common research paper rubric, “which was a huge ordeal.” Further, she stated that her department decided that at the end of each unit they were “going to have a common assessment. . . [that involves] pre-writing. . . using the same rubric. . . and gathering data.” In a light-hearted tone she noted, “So this is turning our department upside down!” This participant had been very much used to sharing ideas and tasks at a previous school at which she taught, so she was bringing ideas of sharing to this group, finding some scattered team philosophy and resistance, but with the full support of Jeanie and the other administrators, was looking forward to better and better collaboration.

Another participant sensed frustration initially within his department’s two PLCs, frustration which converted to positive forward movement. He found that when his department had gone through curriculum revision on the district’s curriculum revision cycle in 2008-2009, department members thought they had declared what their power standards were for their content area, and they thought they had aligned their assessments so results would give them information on their power standard. (For clarification, power

standards for Blue High School are those standards which are nonnegotiable; they must be taught by teachers and teachers must ensure students learn them. One geometry example is *Uses Pythagorean Theorem and its converse to solve problems.*) But department members looked at the assessments that had been given them by the district, and there was further frustration. Jeanie, however, listened to teachers' frustrations and "went to bat" on that department's behalf to the district, this participant stated. This participant's PLCs were then able to create their own assessments in summer 2010, and this participant then became very confident that their assessments would measure what they needed to measure and "inform what goes on in the classroom."

Attitudinal support of PLCs at Blue High School was generally strong, although participants reported small pockets of resistance among the faculty. Participants stated examples such as people on staff used to teaching in isolation resisting the collaboration PLCs' work calls for. Others resisted collaborative leadership, preferring that a principal tell them what to do rather than give them choices or urging them to take an inquiry stance. Again, even though these points were made, positive attitudinal support was evidenced by comments from participants that realistically showed the difficult but promising work of PLC teams. One participant stated, "As I walk past classrooms I see a change in teaching but not as much as I would like. . . and I include myself in that. . . but yeah, we're moving, we're changing the way that we deliver instruction." Another stated, "Our success with that unit was the best it's ever been. . . .We had a huge success at a time of year when it's often very routine and mundane, and it's just dreary outside. It was the most exciting time to be in the geometry classrooms because we had done that

unit where we went through, [sic] and when students were struggling, [and] it fit really well with DuFour's questions." A third participant reported, "Everything we've done in this building has been very collaborative and very shared, and that is not only the foundation that makes professional learning community successful, but it's made our adoption of PLCs much easier because we're used to working with each other in a collaborative way."

Participant answers indicated that the research-based characteristics of *ongoing interaction, workplace relationships promoting collegial work* and *shared decision making* were present.

Subquestion 4: Did this professional learning community establish shared vision, mission, goals, and actions for its work? If so, how have those shared components shaped or driven the work of the educators? I drew data for this subquestion from participant interviews most heavily; I also drew data from one artifact, a "hot air balloon" visual in the interview room a participant gestured toward as she answered. Evidence from interview responses pertaining to this subquestion overlapped responses to the leadership style of the Blue High School principal, Jeanie. Participants responded to the question of leadership style by favorably noting Jeanie's lead in establishing core beliefs and shared vision for the direction of the collaborative work of the staff. All three teacher participants, upon being asked about vision and mission, immediately thought out loud of whether there was a district vision and mission, and although none could state any part of these, all somewhat humorously stated they were sure vision and mission existed at the district level. One participant who had not been at

Blue High School as long as the other teacher participants, had additional thoughts on vision and mission. She thought a particular "hot air balloon" visual held statements about mission and vision. She gestured toward this visual in the corner of the room where we were interviewing and said "those visuals" were in all the rooms. While we did not examine this visual together, as she was just gesturing toward it as part of her answer about mission and vision, I examined it long enough in leaving the interview to note that the balloon image contained title terms such as "Relationships," "Professional Learning Communities (PLCs)," "Rigor & Relevance," "Small Learning Communities (SLCs)," "Student-Centered Focus," "Model Schools Work," and "SLC Guiding Principles in a Student-Centered Learning Environment." The guiding principles may have been what this participant was referring to as mission or vision statements. None of the other participants mentioned this visual. Each participant, including the teacher who referred to the "hot air balloon" and both administrators, referred to the idea that Jeanie and/or the administrative team had the most to do with setting the direction and vision for the school. Participants stated they felt that vision and mission flowed from Jeanie, who encouraged it to flow outward to administrative team to building leadership team to departments and PLC teams as she and other principals supported it.

Jeanie explained how the mission and vision started with her. She had attended a 10-day workshop years before at Harvard University called "The Art and Craft of the Principalship." She first introduced what she calls "The Harvard Process" to her Blue High School administrative team one summer when she was new to the school, in the earlier 2000s. She had realized no one could remember who wrote the then-current

mission or vision statement, and "it was key that, well, if we don't really know where we're going or why we're going that way then maybe we need something a little more concrete." She then worked with the full faculty to create core beliefs and their mission statement. After that she facilitated a similar process with her Building Leadership Team for their team work.

In addition, Jeanie had studied professional learning communities and the work of DuFour "for a long time," she stated, and as she "constantly look[ed] for ways for us to move forward," the DuFour work regarding professional learning communities resonated with her. Jeanie collaboratively worked with her administrative team and a teacher-leader team from 2007-2009 to become involved in what was called "Model Schools Work" ("Using the rigor/relevance framework," 2005) (for high schools specifically) in my Midwestern state, and the national "successful practices network" of which Model Schools Work was part. At the same time, she and her administrative team led the full staff to study portions of *Learning by Doing* (DuFour et al., 2006) and utilized the tools in the book with all staff. The Blue High School Building Leadership Team each got a notebook with the book's handouts, surveys, rating sheets, and other documents. The staff viewed and discussed the DVDs of *The Power of Professional Learning Communities at Work: Bringing the Big Ideas to Life* (DuFour, 2007). This work, and the outward flow of focused mission and shared vision of PLCs, was driving the work of the educators of Blue High School at the time this case was studied.

Interview answers supporting this subquestion indicated evidence of the research-based characteristics of *educator actions based on collective responsibility, shared purpose, workplace relationships promoting collegial work* and *shared decision making.*

Subquestion 5: What are the expected processes of working within a professional learning community? I drew data for this subquestion from participant interviews, observed team work sessions, and artifact examination. I will next describe how data supported the answers to subquestion 5.

Interview responses and artifact examination. Participants were consistent in describing how the PLC meetings looked and sounded, so they articulated there was a basic meeting structure. They each spoke about having an agenda template that their PLC needed to use, a point I can confirm through examination of three agendas from PLCs. Besides common agenda items such as date, time, content area, spaces for topics, and participant names, I noted several items on the agenda about which I asked to get clarity. On the agenda there was a space to name a school and then location within the school, and grade level of the participants. This indicated to me, and was confirmed when I asked follow-up questions of participants, that Blue High School PLC members are sometimes members of not only Grades 9-12 PLCs but also sometimes of Grades 5-12 PLCs (in their content area) such as those educators in music. Participants explained there are regular, intermittent meetings of PLC groups in some content areas where membership is broader than from one building alone. In addition, although the agenda templates did not reflect it, PLC team members initially created norms of behavior for their work sessions, two interviewees stated.

The other agenda item that spoke directly to PLC processes at Blue High School was the inclusion of a table that indicated the four DuFour questions. The PLC's facilitator was to indicate which DuFour question(s) the group was to work on in a given meeting. As a reminder, the four DuFour questions are these: (a) What do we want students to know?, (b) How will we know if they have learned it?, (c) What will we do if they haven't?, and (d) What will we do if they have already learned it? (DuFour et al., 2006). At least three participants spoke to these questions on the agenda in answering interview questions about what PLC work sessions looked like. All three acknowledged that while it was expected that PLCs discuss all four questions on something of a regular basis, most PLCs were still at the first question, which deals with content and the "what" of teaching. One interviewee stated, "I think it's a comfort zone issue." These three interviewees stated that movement must be made toward question four but that would come in time, and that this PLC work was a fairly significant shift. Examination of the four DuFour questions on the agendas revealed that the questions were written in first person plural form, we. DuFour materials that Blue High School studied clearly advocated for a shift in the work of teachers: "from an assumption that these are 'my kids, those are your kids'. . . to an assumption that these are 'our kids'" (DuFour et al., 2006, p. 188). This speaks to the research-based characteristic of *collective responsibility for student learning.*

Another expected process within the PLCs, since the 2008-2009 school year, was that of creation, use, and discussion of common assessments, both formative and summative, particularly as content-area departments went on curriculum review cycle. I

gathered and examined two common assessments from the Music PLC after they had discussed them in the team meeting I observed. The 10th Grade Musicianship Skills Pre-Test consisted of 45 items showing directions for each section, many musical symbols and prompts with multiple choice responses underneath, and a section where students completed a measure. The 11th Grade Music Assessment consisted of 70 items showing directions for each section, many musical symbols and prompts with multiple choice responses underneath, a section where students completed a measure, and a matching section. I also gathered and examined an electronic copy of a geometry assessment that the Geometry PLC discussed during a team work session. That assessment consisted of 22 stimulus-based test items that included multiple choice, short answer, labeling, and more involved answers that required drawing diagrams, solving problems, finding equations, and answering questions.

Close examination of the agenda templates also revealed that the PLC, each time it meets, is to set its outcomes for that meeting. PLCs are given the prompt, “As a result of our work today. . . ” and the facilitator completes that sentence to set the session’s goal. The use of “our work” in a goal statement indicated the characteristic of *collective responsibility.*

PLC work session observations. I observed two work sessions of PLC teams at Blue High School; one was a Geometry PLC and the other was a Music PLC. Both sessions were held near the beginning of school year 2010-2011 on successive Wednesday PLC mornings. The Geometry PLC had eight people in attendance with one additional teacher coming in about 30 minutes after the session had begun; no

administrators were present. This Geometry PLC met in a math teacher's classroom and participants sat in desks in a semicircle facing the screen so they could see the projected agenda and other materials. Music PLC had four people in attendance; no administrators were present. Music PLC met in a music teacher's office with four chairs in a semicircle facing that music teacher's large, open laptop screen. Each PLC session began promptly at 7:50 a.m. with the designated facilitator starting off by going over the agenda: Geometry had its agenda projected from the facilitator's computer onto a screen and Music had given out its agenda ahead of time for members to follow however they wished. Agenda "topics" were articulated clearly on each agenda. For example, the Music PLC's first agenda topic was "Presentation and review of data from the written formative assessment for 10th grade music" and as its second, "Presentation and review of data from the written formative assessment for 11th grade music," followed by three other topics. Geometry PLC had as its first topic "Norms" and as its second, "Chapter 1: What are the goals? How do we know we are achieving them? Are we okay with the changes made? Does the test measure what we want? Is the pacing okay?" followed by five other topics. PLCs used their respective time then to follow their own agendas, led by their facilitators. Descriptions of the two PLC work sessions follow.

Geometry PLC work session. The Geometry PLC facilitator first checked with all members about their group norms of behavior, and then had them notice which DuFour questions they would focus on that day, which were the first three questions: (a) "What do we want students to know?", (b) "How will we know if they have learned it?", (c) "What will we do if they haven't?" The Geometry PLC spent its work session by

entering into a practice-based discussion. They first discussed an artifact of classroom practice, the common geometry assessment that they were all going to give in their classes in upcoming days (described in the previous section). The PLC members went over the assessment draft item by item, sharing various aspects of their teaching, such as supports or pre-testing, that were to help their students prepare for this assessment. One participant, a special education teacher who helped students in a lab setting, spoke to the fact that many of her students struggle although they have IEPs (individual educational programs). Members took many minutes going over, student by student, those who were really struggling in geometry classes. They spoke of placement of students in math. In particular, members spoke of the math situations at Blue High School, both positive and negative. Members discussed the fact that some struggling students could be in a math setting up to four times a day, depending on their placement. The group discussed students who were trending downward, reflecting discussion on assessment results. Members also brought up the question of which students were truly struggling with math and which were just refusing to do the work. To this topic, the facilitator asked, “So how should we tell?” which reflected inquiry-driven learning, as much of the discussion did.

The Geometry PLC kept returning to the geometry assessment; this artifact seemed to be the touchstone of their discussion that day although other topics wove in and out. They discussed how the design of the assessment could either help or hinder students as they worked on their answers. Along with test design, the group talked about the substance of the assessment items, and whether too many were Tier 1 (low-level knowledge). The group touched on the subject of standards-based grading. The meeting

ended by the facilitator asking for items for next PLC time. While the group did stray off-topic very briefly once or twice (with the teacher acknowledging that), very nearly all the Geometry PLC discussion was in line with the agenda items. The discussion was practice based using an artifact of classroom practice, the geometry assessment. The discussion was focused on teachers' learning about the geometry needs of their students. The teachers' interaction was inquiry driven; that is, they were not directed by a district or building topic to have the conversation they had. They knew they had an agreed-upon upcoming common geometry assessment to give, and they wanted to go over this, discuss it, make adjustments, project how students might do, and ask questions as to how the assessment could be improved.

Looking at the subquestion of the expected processes of working within a professional learning community, observing closely the Geometry PLC in action, and examining the artifacts from the PLC work session, I am confident in the data of the research-based characteristics of *inquiry-driven interaction, practice-based discussions using artifacts of classroom instruction; educator actions based on shared purpose, planning, and preparation; workplace relationships promoting collegial work; and focusing on learning* and *results through collegial action*. These characteristics were present in the work of the Geometry PLC the day I observed.

Music PLC work session. The Music PLC members, without formalities or acknowledging the full agenda, moved immediately into discussion of their "10th Grade Musicianship Skills Pre-Test," the first topic of their agenda. PLC members had created this assessment in 2008 and, again at the start of another school year, had just recently

given it to sophomores. One member had brought copies of two packets for everyone: one 10-page packet of graphs showing topical results from the assessment; and one 12-page packet with item analysis information. All members were given a copy of the 10th grade music assessment. The next large portion of the PLC work time was discussion of each assessment topic (knowledge of time signatures, tempo, treble names, key signatures, and others) and the success or failure of students in these topics. Members also went over assessment item analysis; a major topic of interest to them was the success or weakness of students, per the item analysis, based on whether students were in choir only, band only, or in band and choir.

The Music PLC had set a goal of 80% passing to show proficiency. Members went over the data in the charts and tables carefully and thoroughly. They then gave everyone a copy of the "11th Grade Music Assessment," created in 2009, and began a discussion over that as well. Other topics discussed, while not on the agenda, were still related to their practice-based conversation. One topic was the arrival of a guest musician who would be visiting them the next week. Another topic was whether it might be a good idea to give a nationally norm-referenced music test to their students; meeting participants decided to investigate this some more and look into the possible cost of buying a set to examine. They clarified dates for their next meetings, and as an afterthought, one teacher mentioned a good book on music and the brain he had read and was recommending.

Looking at the subquestion of the expected processes of working within a professional learning community, and observing closely the Music PLC in action along

with their artifacts, I am again confident that the research-based characteristics of *inquiry-driven interaction; practice-based discussions using artifacts of classroom practice; educator actions based on shared purpose, planning, and preparation; workplace relationships promoting collegial work;* and *focusing on learning and results through collegial action* were present in the work of the Music PLC the day I observed.

By the same token, through these observations of the Geometry PLC and the Music PLC, some pieces of characteristics were missing. While there was practice-based discussion in both groups, and fairly deep discussion at that, there was no direct conversation about instruction. To my observation, there were no movements toward high-risk conversations; I did not hear or see teachers talking about their own practice and how to improve specific aspects. During this observation I did not see pieces of student work or performance for teachers to discuss as artifacts of classroom practice, although they did discuss student scores and data. For these reasons, I did not see reciprocal coaching, except along the lines of sharing ideas out loud with each other as they discussed. It may be that these segments of the research-based characteristics might have been present on other work days of PLC teams, but they were not present when I observed. Or it may be that these PLCs were moving slowly toward having high-risk conversations with reciprocal coaching about their instruction, but again, these conversations were not present the day I observed.

Subquestion 6: What are the expectations for the work of the professional learning community? The expectations for the work of the PLCs in Blue High School seem to have been to shift their culture from talking collegially about nonlearning-

focused topics (schedules, books, classroom management, or broad educational subjects, for example) to talking about learning and their teaching practice through the four DuFour questions, and making beginning steps to adjust instruction when needed. I drew data for this subquestion from participant interviews, team work session observation, and artifact examination. When asked to describe the conversations that take place in their PLC sessions, participants were consistent in their answers: In their PLCs, they talk about their teaching practice while sometimes looking at artifacts of classroom practice, all in response to whichever DuFour question they are focusing on that session, verbalized and written on team meeting agendas. This is not to say there have not been struggles. One participant explained, “This [PLCs work] is a work in progress. We are trying more to focus on the root issue of student learning and how you can change your practices so that you improve the students’ learning. So I guess that means we are trying to get more to [DuFour] questions three and four. . . . So what do our meetings look like? Well, they’re messy.”

Another participant stated that her PLC was talking about curriculum consistently because of curriculum review; PLC members had been unfocused on their topics before. As well, prior to the teachers’ being in course-specific PLCs, they had been in PLCs focused other topics, such as improving ACT scores which might not have connected with some teachers’ content areas. The work of those PLCs was not as productive; this participant stated she felt their work was more focused now although her PLC was still struggling a bit to all move in the same direction.

A third participant stated, with a smile, that conversations in his PLC were "energetic." They had been working on common assessments and having conversations over those. He stated, "There has been, as we've formed together as a team, a greater comfort with challenging ideas without it becoming a personal attack. That took a little bit of time to develop the relationships, and it's not perfect. There are Wednesdays that we walk out of there certainly not in agreement over anything, but we know that we're coming back again the next Wednesday, and we can keep work toward that goal." He reflected on other aspects of their collegial conversations: "I'll be perfectly honest; there are some [conversations] where we literally hang our heads in shame and go 'oh my goodness, how could we not have gotten that fixed?' Or at the beginning of the year, 'How can they [the students] not be ready for this?'"

Participants clearly stated their expectations that their PLC work would positively affect student learning, although valid and reliable ways to measure that were not readily apparent in PLCs yet, and evidence was largely anecdotal. One participant stated that PLC work "has completely changed the approach of [our] department." This participant's department had formed common assessments and had used them so that every student of theirs was taking the same test and being measured in the same way. Another, knowing her PLC has not gotten very far with the four DuFour questions and was in fact still working with Question 1 (*What is it we want students to know?*), stated with a gentle laugh, "If we [our PLC] were doing a really good job with [DuFour questions] three and four, we would know for sure." She was optimistic that eventually their work would have a "significant impact" on student learning while admitting there

was nothing right now to show that. One administrator stated, “I think the groups that are working well are affecting student learning by really having a better sense of how to use formative assessment to adjust their instruction.” Another administrator, in charge of regularly viewing letter grades given by teachers, stated, “I would say fewer students are failing because we’re regrouping and reteaching for those kids who need it. . . . Teachers are adjusting instruction whereas before we just taught and moved on and taught and moved on, so I think there’s been more adjusting instruction.”

All participants, when asked to characterize the relationships in the school, offered remarks that showed relationships between and among teachers and administrators were positively affecting the work of the PLCs. In his explanation, one participant stated, “I feel very well connected to, very much listened to, very much valued.” As he reflected further on relationships in the school, he took a different angle: He preferred the PLC configuration to trying to work with or discuss anything with Blue High School’s full faculty because it was so large. He explained he felt there could be no genuine interaction in a large room, and that the relationships came down to numbers for him. By the same token, he said that once teachers were working in PLCs, it was more difficult to get to know other colleagues on their large faculty.

When I observed team work sessions, I noted several items that indicated generally positive working relationships. I noted body language, such as eye contact, sitting up and leaning forward to engage in the work; confident voices participating; and facing and talking to each other. As well, I noted language use that was respectful, professional, and on task with the work at hand.

The subquestion of expectations for working in a professional learning community reflected Blue High School's work at shifting toward a culture of learning and results. Expectations were for working collegially to share openly their practices with each other. Participants' answers demonstrated evidence of *collective responsibility for student learning, practice-based discussions using artifacts of classroom practice, educator actions based on shared purpose, planning, and preparation, workplace relationships promoting collegial work,* and *focusing on learning and results through collegial action.*

Discrepant data. One of the teacher participants offered information in her interview that was not quite as consistent as that of other participants. She seemed more uncertain about some of the responses regarding leadership and the professional development calendar than other respondents. There may be possible explanations regarding this. Amber was only in her third year at Blue High School, while the other interviewees had had many more years at Blue High School, even predating Jeanie, the principal. Considering the involvement of the Blue High School staff in the turn toward PLCs, including the dissatisfaction of having to repeat activities when the district required that, considering the busy nature of a teacher's practice, and considering her relative newness to Blue High School, it may be that Amber simply was not involved to the same depth in all the professional learning and changes as the other participants were. When asked about the leadership style of Jeanie, Amber discussed her viewpoint readily, but she also made comparisons right away to her former principal and in fact gave nearly as many remarks about that principal as about Jeanie. This was perhaps due to comfort in

talking about her former principal, whom she may have worked with for longer than her time at Blue High School with Jeanie, although Amber stated she preferred Jeanie's leadership style. I considered this a small discrepancy, certainly nothing major that contradicted or negated patterns or findings, but some of her answers were not as confirming as the answers that were stated by other participants.

As well, another piece of discrepant data connected to Amber emerged. While all participants were asked interview questions regarding how Blue High School PLCs functioned, descriptions of team meetings and activities noted functioning teams except for the PLC team Amber belonged to. Already noted in this section was the fact that Amber's team had never designed or used a common assessment when other teams had been using some for two or three years. She noted that her team was "a little scattered" in their PLC work. She described, with a light-hearted smile, how their agreement to create a common assessment in 2010 had "turned their department upside down!" Again, this does not connote a major discrepancy in the data, but it is important to point out as it may be a factor demonstrating the extent to which Blue High School was functioning as a professional learning community at the time of this study. It seemed as though some teams were functioning well and others were still working toward focused operation.

Case 1: Patterns, Relationships, and Themes

I examined, analyzed, and discussed data in the Findings portion of section 4 for Blue High School. At the end of each section, I summarized which research-based characteristics were especially evident through analysis of the different research subquestions. By examining the data described in the within-case analysis of Blue High

School, three patterns became evident. The first pattern was that all 10 research-based characteristics emerged consistently in the answers to the same interview questions and in the observations of the PLC teams at work. For example, when asked how the school's professional development calendar supported the work of the professional learning community, artifacts showed and all participants spoke with similar detail to the Wednesday late-start sessions, which directly connected to the characteristics of frequent interaction and job-embedded interaction among educators. What broke the pattern was that certain characteristics seemed to have had less emphasis than others across all types of data gathering, or at least weaker data supporting the characteristic. One example is that of participants undertaking high-risk conversations during their PLCs, or including discussion of instruction. While they did have practice-based discussions as they spoke about their geometry assessment or their Grade 10 music assessment, they seemed to share information and ideas more than take the risk of opening up their practices fully to expose how they instruct toward those assessments.

Remarks throughout the interviews indicated a second pattern of demonstration of the characteristic of collective responsibility at Blue High School. Not only did participants echo the first and foremost goal of Jeanie, the principal, that of putting the student first in terms of achievement and in doing what it takes to help students be successful, but the school's adopting the DuFour four questions, in PLC conversation, on agendas, and in spirit, also seemed to help teachers internalize the sense of collective responsibility for student learning. The use of "we" and "our students" was prevalent.

There was not an overall sense of isolated teaching, although some pockets of that may have been occurring.

A third pattern that emerged was that of *inquiry-driven interaction* among educators, one of the characteristics of professional learning communities. While the action of forming PLCs was directed by the district of Blue High School, an action Blue High School had already taken, how the teachers inquired and learned was not directed. In the PLCs I observed, I saw inquiry-driven interaction among educators, prompted by the four DuFour questions verbalized and on the agendas.

One relationship noted was that of how long participants in the study had worked with Jeanie, the principal. It seemed that the longer the participants had worked with Jeanie at Blue High School, the more consistent their answers were to prompts about their PLCs, leadership, relationships, and expectations. For example, four of the five interviewees, excluding Amber (the teacher who had not been at Blue High School as long as had the other four participants), responded consistently regarding the notion that Jeanie set the vision for putting students first as she guided teacher learning toward collaborative teaming. Another example is that most interviewees stated immediately, upon being asked, that Jeanie's leadership style was collaborative. I saw these as a successful effort on Jeanie's part to impart a distinct vision, core beliefs, and shared direction and actions for Blue High School. Yet not all PLCs were operating at the same level at the time of the study, as evidenced by the remarks of Amber, the teacher who responded that her PLC was "a little scattered." To refresh, two PLCs were formally

observed for this study; one more PLC, that to which Amber belonged, was described by her during her interview.

In addition, a second relationship between and among some of the 10 characteristics themselves (Appendix B) became evident as I examined the data. It seemed that *frequent, job-embedded,* and *ongoing interaction* affected the level of *practice-based discussions, educator actions based on shared planning and preparation,* and even *workplace relationships promoting collegial work*. For example, when Blue High School's professional development calendar allowed for Wednesday morning late starts, this permitted the PLCs to come together for practice-based discussions where teachers worked and planned together based on the shared purpose of improving student learning. It seemed that *shared decision making*, including leadership style, affected the level of *collective responsibility, educator actions based on shared purpose*, and *workplace relationships.* For example, the collaborative, shared leadership practices of the principal, Jeanie, infused the PLCs with core beliefs and vision that originally flowed from Jeanie to her administrative team to the Building Leadership Team to the PLCs, helped with positive workplace relationships, and supported teachers feeling as though they are responsible together to help students learn. *Practice-based discussions, using artifacts of classroom practice,* affected *inquiry-driven interaction* and *focus on learning and results.* For example, PLC team members brought common assessments that caused discussion of assessment results and questions why students did and did not learn items on those assessments. *Practice-based discussions moving toward high-risk conversations* affected *workplace relationships promoting reciprocal coaching.*

A theme that emerged from the study was that of leadership. In particular, the ability of Jeanie, Blue High School principal, to be a visionary leader for the faculty as they progressed toward being a fully functional professional learning community, was consistent throughout all participants' remarks. This occurred through interview questions that sought information on leadership affecting the work of the professional learning community, leadership style, the school's mission and vision, characterizing the relationships between and among the teachers and administrators, and a focus on learning and results through collegial action. This latter characteristic was typified by Jeanie identifying herself as the "head learner" of the school and two other participants using that same phrase as they described her leadership. Close behind participants talking about a single leader, Jeanie, came similar comments about the strength of her own leadership team in leading and supporting teachers in their PLCs work. I thought this was not unconnected to Jeanie preferring a constructivist style of leadership and shared decision making among her own administrative team and teacher leaders. As stated earlier, I would term Jeanie a *craftsman-constructivist* leader because of her abilities to create conditions and reciprocal processes that allow people to construct meaning together regarding issues and situations that move toward a shared vision. Jeanie's leadership and leadership abilities seemed to have a strong influence on the work of the professional learning community.

I have discussed my findings through the central research question and the subquestions pertaining to Blue High School. I found that all 10 research-based characteristics were present in the professional learning community of this school. Of

particular strength of connection to the conceptual framework were the characteristics of *educator actions based on shared purpose*, *workplace relationships* and *shared decision making.* Other characteristics had fairly strong connections to the conceptual framework such as *collective responsibility for student learning* and *focus on learning through collegial work.*

Analysis of Case 2: Green High School

I gathered data on the research-based characteristics of the professional learning community of Green High School. I gathered data through interviews with five educators from Green High School and district for their individual views on the professional learning community at Green High School, through my observation of two teams of teachers at one of their designated work sessions, and through team session artifacts given me during and after observation. One team consisted of four teachers; the other consisted of five. In this section, I will explain how my central research question and related subquestions were answered by responses from the interviews, observation of team work sessions, and artifacts examined.

A brief reminder about authentic intellectual work (AIW), adapted from section 3, might be helpful. Small teacher teams in an AIW school undergo training. They learn about the research base and conversation protocols and then practice those protocols which include scoring and discussing teacher tasks, student work, and observed instruction against standards. *Scoring and discussing* means teacher team members look at a teacher task, for example, and score the task against rubrics in the AIW scoring

manual and then discuss; the rubrics outline standards that address research-based criteria such as construction of knowledge, disciplined inquiry, and value beyond school.

Following is a discussion of the findings of the research at Green High School as seen through the central research question and research subquestions.

Central research question: Research-based characteristics present. My central research question asked the following: *What research-based characteristics of professional learning communities are evident in two local high school professional learning communities, each of which took a different approach to community formation?* Answers to the main interview questions, follow-up questions and prompts, as well as collaborative team work sessions and artifacts examined, indicated that all 10 characteristics (Appendix B) were present in the professional learning community of Green High School, although again, there were varying degrees of strength and weakness of connection behind each. What follows is a breakdown of each research subquestion to show how participant data corresponded to the central question. Discrepant data, patterns, relationships, and themes are discussed following this portion of the findings.

Subquestion 1: What leadership style is evident at Green High School and how does it affect the work of the professional learning community? The leadership style at Green High School appeared to be one of shared leadership and responsibility mixed with top-down authority to fulfill a vision Anne, the principal, holds for the school. I drew data for this subquestion from the interviews of the five educators at Green High School and the district. Anne was characterized as a principal who finds out about various educational initiatives, wants her faculty to get involved in them, and then works to bring

those to the staff to help them own the vision and begin the initiative. One participant stated, “She’s really good at getting us involved in a lot of stuff and making sure we’re up on all the new [initiatives].” Another said, “I think she has big ideas. . . and says, ‘Here’s what I want us to get done; now let’s find tools so we can do that.’” Regarding AIW, Anne investigated this in late school year 2006-2007 and felt that it would be a good next step for her faculty, so she brought this idea to Green High School, via a state-wide pilot initiative, and was perhaps the single most key person to its getting started there.

There have been, however, some drawbacks to Anne’s being the key person to AIW, as leader. One participant saw her “with minimal input. . . the scheduler, the organizer, the communicator.” Three participants voiced they wished Anne would have included her administrative team, three associate principals, in those beginning discussions; instead, these administrators were seen as outsiders looking in, especially in the early stages of AIW but also somewhat into the third and fourth years. Another participant stated that while it would be unfair to say Anne needs to take the primary leadership role in every initiative—this is why she started with “ten strong people [teachers]” in AIW—Anne “is a little more distant” in terms of being in the midst of the actual work of AIW, such as sitting with teams and scoring and discussing. On the other hand, one participant thought that Anne did take the right role in starting initiatives and then letting teachers move forward with them, giving them her support. This participant used a football analogy: “*Really* good coaches coach coaches. . . . There are one hundred plus teachers here. She [Anne] can’t go running around and run everything. She has to have other people be able to run things. I think they coach teachers, good principals do.”

Participants stated some mixed feelings about how Anne's leadership style affects the work of the professional learning community. While she described a shared leadership model that she follows, Anne felt she knows herself well enough to say, "If I don't think that you as an individual are doing your assignment properly, I might want to say I will do it myself." When asked whether she sees herself as a principal who gives teacher leaders authority to make final decisions or looks to them for input as she herself makes final decisions, Anne stated she felt it has to be both, and because a principal is ultimately held accountable, "I have to keep us moving forward." One teacher participant stated, "When you give teachers the autonomy to proceed with something and not feel like they're being micro-managed, I think we appreciate being treated as though we're professionals, trusted." Another participant also used the term "micro-management" and stated her appreciation that Anne did not do this with staff with authentic intellectual work. Both participants liked the fact that Anne "handed off" responsibilities of AIW as well as other educational work in the building to teacher leaders. Yet another participant stated, "[Anne] handles a lot of stuff on her own that she wants to handle on her own." Participants saw Anne as a principal who shares leadership or responsibilities in many situations yet takes the sole leadership role in others.

Participants' answers spoke directly to the research-based characteristic of *shared decision making*, even though there was also some sense that the building principal could have a tendency to move some things from the top down. Answers, however, were detailed and abundant enough to state that Green High School's professional learning community showed evidence of this characteristic. Also, the characteristics of *workplace*

relationships promoting collegial work and *educator actions based on shared purpose were present.*

Subquestion 2: What is the organizational structure of the school calendar, particularly regarding professional development? The school professional development calendar at Green High School was structured to accommodate professional learning. I drew data for this subquestion from participant interviews and artifacts. By speaking in detail of their professional development calendar and AIW, participants demonstrated three characteristics of professional learning communities: *frequent interaction, job-embedded interaction,* and *ongoing interaction.* Participants reported, as of their third year in AIW and moving into their fourth year, each Wednesday was an early dismissal day, meant for educators to be able to get together during their workday to discuss their professional practice. Students were dismissed at 2:36, and teachers were to come together from 2:40 until 3:45, the end of their contracted workday. I cross checked this by examining their district professional development calendar (Appendix L), which states, "Collaboration Schedule: All schools will dismiss 45 minutes early every Wednesday beginning Aug. 25, 2010." The district allowed building staffs to decide what professional work to do on these early-dismissal Wednesdays. At Green High School, the second and fourth Wednesdays were used for AIW; the first and third Wednesdays were used for department meetings and then a building choice of learning such as SLCs work or instructional strategies or book studies. "SLCs" stands for smaller learning communities; both Anne and Chris referred to this as a term used for small group work for teachers at Green High School.

In the first year of AIW, and even into the second year, Green High School had not had adequate advance time to create a purely job-embedded schedule for educator AIW interaction. During that period of time, teams participating in AIW met to score and discuss weekly or every other week during before- or after-contracted work time and then were paid by state-funded AIW grant monies. In this way, AIW was not strictly job-embedded for the first two years, since it was before or after workday hours. Not all participants liked this; one interviewee in the study stated that, even though the teachers were paid for those outside-hours, often just a 60-minute session or slightly more, it was "more likely 45-50 minutes if someone [had] to leave early to coach or get students into an activity. . . . I always felt short-changed when I met those times." In its third and fourth years and moving forward, Green High School structured ways to make its calendar for professional development support job-embedded educator interaction for their collaborative teaming in AIW.

In addition, beginning in its third and fourth years, Green High School administration was able to design other days in the professional development calendar to support teams doing AIW as well as other professional learning. Anne, the building principal, reported that in its third year, Green High School was able to plan to have a scheduled professional development day on the day of the AIW Mid-Year Institute so that all faculty could attend. In its fourth year, Green High School was able to plan for another full professional development day, outside its regular, frequent bi-monthly team sessions, that was devoted to AIW.

Participant answers showed a direct connection to the presence of research-based characteristics of *frequent interaction, job-embedded interaction,* and *ongoing interaction among educators* at Green High School.

Subquestion 3: What support is evident for professional learning community in Green High School in terms of infrastructure, district, financial, and attitudinal support? Green High School showed evidence of infrastructure support; I drew data for this subquestion from participant interviews and team observations. Green High School's district office administrators supported Green High School's undertaking AIW from its start as a pilot school in 2007-2008. In fact, three district administrators took part in AIW kick-off trainings alongside new teachers during the first two years; one of those administrators, interviewed for this study, then attended on a somewhat regular basis one AIW team's scoring sessions during Green High School's starting years. As well, another district administrator then not only continued support of AIW in Green High School, she also helped AIW expand throughout the district to at least one starting team at several of the other district school buildings. Another district administrator regularly attended AIW site visits, particularly in the starting years. The district supported schools in their choices of professional learning on the Wednesday early dismissals as well as on professional development days.

Green High School, as faculty moved through four years of involvement in AIW, continually made adjustments to the composition of AIW teams. Team adjustment accommodated teachers new to AIW, with veterans regrouping into different teams to help new teachers along as they moved forward in a "continuous improvement" mode

with AIW. These structural changes were made by the Green High School Lead Team, composed of Anne, the principal, and two lead AIW teachers, each from one of the original pilot teams. These structural changes provided evidence of the characteristics of *workplace relationships promoting collegial work* as well as *ongoing interaction among educators* at this school.

Green High School had financial support for their AIW. In the first three years, financial support, especially for AIW performed outside of work hours, was provided by grant monies from the state department of education. From early in the pilot, however, Green High School administrators knew those grant monies would not extend beyond three years, and that they would need to build in financial support. Anne and her School Improvement Team, a team of teacher leaders who meet regularly to discuss all matters dealing with the Green High School educational program, worked to secure funds through Teacher Quality money to continue AIW outside the school day if that was necessary beyond the Wednesday early dismissal opportunities. (Again, *Teacher Quality* money was money supplied by the state to support improvements in teacher quality to meet requirements of No Child Left Behind.) While Anne reported that some School Improvement Team members struggled with the use of their school's Teacher Quality money, some members thinking the Teacher Quality money was going for "too much AIW," Anne and her team secured funds for AIW nonetheless.

Besides financial support within Green High School and from the district, two lead teachers from Green High School trained and worked to become the local coaches for AIW expansion in the district. Two lead teachers attended AIW Lead Team meetings

three times during each school year, attended kick-offs to support the lead coach as she trained the newest Green High School teachers, attended summer AIW coordinators' academies, and led kick-offs of their own at district schools coming on board with AIW. Then in addition, two more lead teachers from Green High School followed in the footsteps of the first two lead teachers in order to build capacity for their building and district. Considering they were full time teachers, these four lead teachers needed and received a great deal of support from schools and district for their dual roles.

Green High School had attitudinal support from the staff of Green High School, although that was not without some struggle. When Green High School entered into the pilot year of AIW, two teams of five teachers each quite willingly stepped forward to attend the first AIW kick-off and begin this professional learning along with their principal, Anne, and two district administrators. Their volunteerism and work with AIW helped spark interest in this framework among others on staff, and in the second year, 2008-2009, Green High School more than doubled their numbers of teachers who entered into the work, although a few of those were a bit reticent. But in the third year, 2009-2010, as the desire to continue on the part of current practitioners grew, interest waned a bit on behalf of the rest of the staff, yet they were compelled to attend a kick-off and begin AIW. Some resistance from late-comers was felt throughout much of 2009-2010, but Anne and her lead team members took measures to reconfigure the teams to redistribute veterans and other supportive teachers, get support from AIW coaches and liaisons, and rejuvenate the work so that attitudes adjusted and smoothed out somewhat. Responses from participants in this study indicated that by 2010-2011 all teachers

understood that twice monthly AIW teams were to meet on Wednesday early dismissal days. Teachers understood that AIW was now a large part of the ongoing professional development of each teacher of Green High School, in "continuous improvement" mode rather than a "professional development program" with an end in the near future. In checking back with participants on this idea of *understanding*, teachers' *understanding* did not necessarily mean an enthusiastic reception from all teachers; there was enthusiastic acceptance by perhaps a third of the staff, acceptance by a large number, perhaps another third, but a more grudging acceptance of this by the last third as a model of professional learning.

Veteran teachers in AIW supplied leadership and positive attitude toward the work of these AIW teams. When asked about the mission and vision of the school, and how those fit into team work of AIW, one interviewee described some key phrases from the district mission and vision statement, and then stated:

> That's one of the things that I find appealing about AIW. I think it really does support [the district mission] because I think it's really about the students. [AIW researchers'] research is about the students achieving more, the students engaging more. The students are thinking more. And if you think about what we want students to do on their life journey, we want them to be independent thinkers, know how to problem solve, apply higher order thinking, and carry on substantive conversation in any context. So I think AIW more than most initiatives really supports the vision quite well.

This same participant also stated:

> What I really do appreciate about the AIW framework is I feel that this really is a professional learning community. That we are there with a meaningful purpose, it has meaningful results if we go through the process in ways it's intended. . . and I don't know that I've had that to the same extent in any other initiative I've worked with.

She went on:

> The other thing about this framework is if you buy into it, it's the lens through which you view everything. . . . Five years ago I would have said, 'Ah, kids don't study.' But now I can look at it and I can see the parts that are my fault. . . well, not my fault, but I can name it: This didn't get the result I wanted because I didn't do this.

When asked about collegiality and workplace relationships around AIW, a teacher participant reported, "I think it [collegiality] has gotten better in departments that have been in AIW a little bit longer. Language Arts and Social Studies got started sooner. These are the teams that have really functioned well." This participant went on to describe how teachers had gotten ideas from simply participating in the scoring and discussion sessions, even without having had their own work discussed necessarily, although more feedback and ideas naturally occurred when a presenting teacher shared his or her work. This participant stated, "Now we actually know what's happening [in classrooms]. We helped Luke score [via AIW criteria] his assignment and then asked how that assignment was going in class." One participant was asked whether the collegiality in AIW was better than when working in their SLCs (smaller learning

communities): “Oh definitely, yeah. Those [SLCs] are just like, share your best work and OK, great, pat on the back and move on. I mean, it doesn’t do anything for you.” A third teacher participant stated that positive workplace relationships extend beyond Green High School; this participant felt strongly about positive collegial relationships around AIW existing at the district level. Acknowledging participation of at least three district level administrators, and in particular one associate superintendent, Judy, this participant stated:

> I think she [Judy] is intimately involved in AIW. She goes to the big meetings, she is in discussions with people—you know, ‘How’s it going? How can we improve this?—so I think she also is kind of a big picture person of ‘What is it? Where is the big direction we’re moving the district?’ I think this [AIW] is one of the things that will give us a little bit of a push.

Attitudinal support of AIW at Green High School was strong among those interviewed. Participants admitted that there exist pockets of resistance or reluctance about AIW, but answers generally pointed to efforts to uplift attitudes toward the work over time.

Participant answers indicated that the research-based characteristics of *workplace relationships promoting collegial work, collective responsibility for student learning, educator actions based on shared purpose and planning and reciprocal coaching, focusing on learning and results through collegial action,* and *ongoing interaction* were present.

Subquestion 4: Did this professional learning community establish shared vision, mission, goals, and actions for its work? If so, how have those shared components shaped or driven the work of the educators? I drew data for this subquestion from participant interviews; evidence from interview responses pertaining to this subquestion overlapped responses to the previous question that sought answers to attitudinal support. When participants were asked to describe Green High School's mission and vision pertaining to professional learning community, most interviewees first recalled bits and pieces about the district mission statement, some phrases of which were "feeling safe," "enabling students to do the best they can to be productive citizens," "preparing them for their journey," "challenging students," and "knowing and lifting each child as they pursue their life journey." Several participants remembered the phrase "know and lift each child," although one interviewee called that phrase "campy." It was clear all participants were familiar in general with the district mission and vision, although none had it memorized.

Green High School, since 2002, had surveyed every student every year on perceptions of "shared vision" of the school community; regular surveying may explain why all respondents clearly remembered phrases and passages from the mission and vision when asked. Anne stated that these particular shared-vision scores "improved by 50%" from the start of that survey in 2002. She stated that the other part of their mission was to lessen the academic gap between their subgroups, so they had worked on positive relationships with students, and they had worked to maintain academic rigor with all students because she felt, "It is easy to default to 'easy'." Another participant stated, "I

think that we develop things that fit the mission and vision." This participant went on to describe the fit between the mission and vision and AIW:

> If we want to know them and lift them, and if we want to give them all a good opportunity to challenge themselves, then, one, we have to have an honest evaluation of what [the students are] doing with higher order thinking.

This participant then described how colleagues, using the AIW scoring and discussion process, went over their Advanced Placement U.S. History semester test, and "it failed miserably," although their students generally did very well annually on the Advanced Placement U.S. History assessment. So she and colleagues began a three-year project to ensure their own semester test demanded higher order thinking from students. This participant related how the Social Studies AIW team desired this: "If we're going to challenge every [student], we're going to need to use as many instruments as we can to determine that what we're doing is valuable." This participant's remarks spoke to the phrases in the mission and vision and tied it to a concrete example through use of AIW.

Interview answers supporting this subquestion indicated evidence of the research-based characteristics of *ongoing interaction, collective responsibility, educator actions based on shared purpose,* and *workplace relationships promoting collegial work.*

Subquestion 5: What are the expected processes of working within a professional learning community? I drew data for this subquestion from participant interviews, observed team work sessions, and artifact examination. I will next describe the data that supported answers to subquestion 5.

Interview responses. When prompted, all participants were consistent in describing what AIW meetings look like and sound like. They described a basic meeting structure, although there is no set agenda on paper. Participants stated they learned this basic meeting structure in the training they first received at an AIW kick-off in their first year. After the kick-off, and at least up to the point of this study, coaches then facilitated site visits each year at the school during which they reinforced the basic meeting structure, among other things. A meeting description follows.

Basic AIW meeting structure consists of team members coming together at a scheduled time, all bringing their AIW scoring manual and a writing utensil. A teacher who wants some feedback on a certain task brings in copies of that task and hands those out to each member. A facilitator helps guide the scoring session and asks some clarifying questions at the beginning, as do the members, about the task. All team members individually score the task against the standards rubrics in the scoring manual; the criteria in these standards speak to construction of knowledge, elaborated communication, and value beyond school. The members, when they score, simply put numbers, according to standards 1, 2, and 3, on the task or a sticky note. The facilitator then asks for and posts all their scores on a large chart paper or on the white board. All members next discuss the task by speaking to the scores they posted, using evidence they

found in the task. They talk about each standard, one at a time, and why they felt the task was or was not at such-and-such a level for those standards and criteria. After discussion of the task against the criteria, they offer recommendations to the presenting teacher, if that teacher desires that. They usually end by asking the presenting teacher to reflect briefly on the feedback and whether or how it was helpful with regard to that task. Through responses from all research study participants, this general meeting outline was consistently offered.

AIW Team session observations and artifact examination. I observed two AIW team sessions at Green High School; one was a social studies AIW team and the other was an English AIW team. The social studies team session was held in June 2010, shortly after students left for the year, and when teachers still had options to work on professional development. This would have been at the end of Green High School's, and this team's, third year in AIW. The meeting was on a Wednesday morning and lasted about two hours. Four social studies teachers were in attendance (no administrators); they were paid for their off-contract work for this particular session.

The English team session was held in September 2010, shortly after classes had begun for the new school year. This would have been at the beginning of the high school's, and this team's, fourth year in AIW. The meeting was on a Monday after school and lasted one hour. Five English teachers were in attendance (no administrators); they were paid for their off-contract time for this particular session of professional development.

Artifact examination. Before describing the team work sessions, it might be helpful to discuss the scoring manual artifact so understanding of the team discussions that follow is clearer. This manual was called *Teaching for Authentic Intellectual Work: Standards and Scoring Criteria for Teachers' Tasks, Student Performance, and Instruction* (Newmann, King, & Carmichael, 2009). The manual was divided into four parts: an introductory section called "The Purpose and Uses of Scoring"; scoring teacher tasks; scoring student performance; and scoring instruction. Each of the latter three contained an "Introduction and General Rules for Scoring Teachers' Tasks" section, and standards and scoring criteria for language arts, mathematics, science, social studies, writing, and "any subject" tasks or student work or instruction. *Any subject* was intended for use in any content area not within those other named areas, such as art or world languages, for example. In each of those named content areas in the manual, there were two pages devoted to each standard: an overview page in narrative form; and a rubric with levels that more briefly describe the standard's expectations for each level and a column for notes. Appendix M shows a narrative page and the corresponding rubric for Any Subject, Standard 1, Construction of Knowledge, for example.

These sections reflected the AIW framework, a framework found in the artifact named *Authentic Instruction and Assessment: Common Standards for Rigor and Relevance in Teaching Academic Subjects* (Newmann et al., 2007) (commonly called the "blue book" by Green High School AIW teams). See closer examination of this artifact next.

Second artifact examination. I also examined *Authentic Instruction and Assessment: Common Standards for Rigor and Relevance for Teaching Academic Subjects* (Newmann et al., 2007). This was the book popularly called "the blue book" by Green High School AIW teams, due to its blue and white cover. This was a 93-page book divided into parts and chapters. It was the book those interested in AIW were asked to read before coming to an annual kick-off for new-teacher training for foundational information. Part I of this book addressed the AIW criteria and research. Part II was about teaching to promote AIW with standards and rubrics including those tied to instruction, teachers' assignments and tasks, and student work. Part III addressed implementation, including issues and activities for the classroom teacher and school support. There were a references section and appendices addressing general rules to guide scoring and scoring student writing. I examined this book closely for purposes of this study, and it seemed as though reading this book at the start of AIW, along with using the scoring manual each time a team scores, would lead a team to have a solid theoretical and practical foundation in what is meant by AIW and its implementation.

As mentioned above, this artifact contained the framework that was tied directly to the AIW scoring manual and the standards and criteria within. Examination of the framework revealed the three criteria for authentic pedagogy and student work: construction of knowledge; disciplined inquiry; and value beyond school (Newmann et al., 2007). These criteria were revealed especially as applied in research measuring student achievement with these standards, rooted in the research of Newmann and Associates and others (Avery, 1999; King et al., 2001; Lee et al., 1995; Newmann, Bryk,

& Nagaoka, 2001; Newmann et al., 1998; Newmann et al., 1996). Examination of both the scoring manual and the *Authentic Instruction and Assessment book* revealed general explanations of the criteria found in AIW. Generally, and depending on if it were a task, or student work, or instruction being observed, *Construction of knowledge* would seek whether the teacher demands higher order thinking or the students show higher order thinking skills, such as creating generalizations or applications, analyzing, interpreting, or evaluating. *Disciplined inquiry*, under which are contained elaborated communication and deep knowledge, would ask whether students are building and demonstrating complex understandings of concepts in a discipline. *Value beyond school* would ask whether the teacher demands and the students "apply academic knowledge to understand situations and solve problems outside of school, or. . . show academic knowledge only in forms useful to succeed in school" (Newmann et al., 2009, p. 2). It was clear from perusing the scoring manual that members went to a specific part of the manual to read the narrative and score against the rubric the item brought by the teacher. These specifics in the standards and criteria were all rooted in the *Authentic Instruction and Assessment* book.

Descriptions of other artifacts from the team session are embedded within the text of team observations below. Descriptions of still more AIW artifacts given me after the meeting follow the next segment on the two team work sessions. Descriptions of team work session observations now follow.

Social Studies AIW Team. The social studies AIW team met in a teacher's classroom; they sat in a small circle of desks. They had planned to score and discuss two

different teachers' tasks over their scheduled period of time, which was a little over two hours. They each brought with them a scoring manual called *Teaching for Authentic Intellectual Work: Standards and Scoring Criteria for Teachers' Tasks, Student Performance, and Instruction* (Newmann et al., 2009). The group began with Kate, who had brought a teacher task to score. Another teacher, Nell, offered to facilitate the session, since Kate reminded them she could not facilitate as presenting teacher.

Kate, the presenting teacher, passed out copies of the task to team members and explained a little bit about the task, which was from her psychology class composed of sophomores, juniors, and seniors. It was a project designed to lead students to apply their understanding of the item on the task labeled "Erikson's Psychosocial Stages of Development." The task involved students bringing in photos of themselves at various stages of Erikson's stages of development and discussing the photos and stages in some way to show their understanding of the stages. Kate explained she usually models this for students before asking them to work on the assignment.

Examination of this artifact showed a one-page, one-sided sheet with a title, a description of the project with instructions to students, a due date, a brief description of work time on the project, point value for the project, and then a listing of "Erikson's Psychosocial Stages of Development."

Nell, the facilitator, then asked everyone to score the task against the three social studies standards and criteria in the scoring manual, reminding them of those page numbers in the manual showing the rubrics. The room fell silent for perhaps five to seven minutes while team members scored the task individually against the three

standards. Team members wrote on the task and flipped through pages in the scoring manual while they worked individually.

Nell finished and, while others were finishing, on a piece of blank paper created a grid showing the standards and criteria, preparing the grid to receive the scores of the team members (sample grid, Appendix N). On the grid she wrote the four team members' names down one side and then abbreviations for *construction of knowledge, elaborated communication,* and *value beyond school* across the top. In a final column, Nell also added the label "comments." When all members, including Kate, the presenting teacher, were finished individually scoring, Nell asked each for their scores for the three standards. One by one, they said aloud their scores, such as "2, 1, 2+" or other combinations as they had assigned. (The standards rubrics in the manual displayed levels 1-2-3 in construction of knowledge and elaborated communication and levels 1-2-3-4 in value beyond school.) Nell wrote down these scores on the grid. There were no other remarks at this time other than the scores being given. The grid was then turned around from Nell and shown to all team members in the circle. All members then looked at it to get a sense of the spread of scores over each standard. Nell verbalized some items they were all seeing on the grid, such as the spread of the scores or any discrepancies. She then prompted discussion on the first standard, construction of knowledge.

Discussion over construction of knowledge in the task ensued, going from member to member, including remarks from Kate, the presenting teacher. One by one, teachers justified, by drawing evidence from the task and using the language of the rubric, why they gave it the score they did. When members discussed, they offered their

comments in descriptive language, not in evaluative language, and most of the time, members spoke directly about the task, not about the teacher. One remark from one participant, for example, was:

> I went back and forth between a 1 and a 2...and here's what I was looking at. I was looking especially at the expectations with the project here. . . . There's really no instructions [to the students] that get to those higher order things like evaluation and analysis and synthesis.

Another: "Yeah, I thought that. [But] I got up to a 2. I thought it was implicit that they had to have at least an analytical understanding of each step." Discussion in this vein went on for about eight to 10 minutes, with all members contributing to the conversation. Recommendations to the presenting teacher took place almost from the beginning. Kate, the presenting teacher, also remarked several times, but as she listened to her team mates, she also took handwritten notes on her copy of the task. While many lengthy, substantial descriptive remarks were made, in a give-and-take fashion, members also continued to offer suggestions of how the task could be improved for construction of knowledge while still keeping the remarks descriptive and not judgmental. For example, one member offered:

> But if we really want to bump it up to a 3. . . [tell students to] expand what you learned at each stage and than have an expectation of 'interpret'. . . . Compare this picture to where you were in the psychosocial stage. . . . Make the expectation when they're presenting that you must successfully explain this to the class.

This member elaborated for another minute or two. Another comment started, "What if you require that they have digitally or in writing all of the five stages but then that they have one super stage where. . . they're going do a lot on that?" That member went on to explain more fully the idea in mind for the presenting teacher. Kate, the presenting teacher, took notes on the recommendations and verbally agreed and nodded along with the conversation. After about 15 minutes, conversation about standard 1 came to an end.

Nell moved the group on to discussion about standard 2, elaborated communication. They all looked at their scores again on the chart in front of Nell and began discussion, using the standard 2 pages in the manual. Again, each member contributed, saying why each thought it deserved the score given, drawing on evidence from the task to justify that score using language from the rubric. They continued to use descriptive language as they spoke, again, in a conversational, give-and-take fashion. This discussion lasted for about eight to 10 minutes, again with members going deeply into conversation about how or whether students were asked to elaborate their thinking in ways for the teacher to assess their knowledge and application of that knowledge. Team members moved to giving Kate some ideas of how to improve the elaborated communication score if she wished to do that, which she indicated she did.

Nell then moved the group to discussion about standard 3, value beyond school. They followed the same pattern of looking again at their charted scores to begin the discussion. They each contributed to the conversation of justifying their scores against evidence drawn from the task. They continued to use descriptive language as they remarked on various aspects. They continued to use the language of the rubric.

Members began to recommend ways to improve the task for value beyond school, but Kate stated, “I don’t really care if this particular task is high in value beyond school.” Two members stated they liked the idea of the project and wanted to “steal” it from Kate. This seemed to be the only evaluative language used during the conversation. After several minutes of conversation regarding this standard, Kate offered some thoughts on the feedback she had received from colleagues: “Thanks. . . actually, I like that these are changes I can easily add, and it doesn’t change the time frame. . . . Cleans it up a little bit which is good.” Someone then commented, “You want it to stay flexible.” Kate responded, “Right. Awesome. Thanks.” A member asked Kate if she wanted their comments written down on their copies of the task, and she responded she did. The group then called for a break before coming back to score the second item. Scoring and discussion over Kate’s task took about one hour and five minutes.

When the group came back, Kate offered to be facilitator. The group was to discuss Josh’s and Luke’s task, which was a semester test for Advanced Placement U.S. History. Luke explained that a small group of three Advanced Placement U.S. History teachers had been working and reworking a common semester final exam that they described as a test of “stimulus-based multiple choice questions.” He explained a little of the background of the creation of the test. He stated that their group had earlier met with a Green High School district administrator, one who had gone through the authentic intellectual work training; in this meeting, they had all wanted to discuss the test in order to “apply some of the AIW principles to it” and now Luke and Josh wanted to bring it to the team in order to score and discuss several test items. Luke stated their smaller team

did not care about looking for standard 2, elaborated communication, since it was a multiple choice test. After a bit of conversation, Luke and Josh decided the team should just score and discuss construction of knowledge for each of the test questions 18 through 24 and nothing else, as better construction of knowledge for stimulus-based multiple choice questions was really what they were looking for. Again, scoring and discussing means teacher team members look at a teacher task, for example, and score the task against rubrics in the AIW scoring manual and then discuss; the rubrics outline standards that address research-based criteria such as construction of knowledge, disciplined inquiry, or value beyond school.

My examination of these artifact pages of questions 18-24 showed that four questions consisted of a stimulus of some kind, such as a quotation, a painting, or a photograph, each of the last two in black and white and about 2.5” x 3.5” in size. The stimuli were followed by a prompt followed by five possible choices labeled A, B, C, D, E, in vertical fashion under the stimulus. The last three test items examined by the team were simply partial phrases that needed to be completed correctly by students choosing the correct response placed among A, B, C, D, E, in vertical fashion under the prompt.

Kate called for everyone to individually score. One team member asked one additional question of the presenting teachers: “On the pictures [on the test]. . . have the students ever seen these before in class?” Josh and Luke said no but that students had seen some of the photos or visual representations in their other colleague’s class. Kate then asked all to score individually.

The group was silent for several minutes, writing on the test and flipping pages of the scoring manual. When Kate finished, she created a grid similar to Nell's during the first session but noted only construction of knowledge at the top and a space for each of questions 18 through 24. When all seemed to be finished scoring, Kate called for construction of knowledge scores from each teacher for each question. She wrote these on the grid. When she turned the grid around for all to see, she then circled some discrepant scores. Kate herself began the discussion of her scores, drawing evidence from the test, using the language of the construction of knowledge rubric. Discussion then went around and around the group, each teacher justifying scores by citing evidence from the task and the various questions. The group went through each question, from 18 through 24, offering descriptive remarks and asking questions to help clarify and solidify their thoughts on the level of construction of knowledge. One question asked was, "Is the author the most important thing here?" [on a particular stimulus-based test item]. The two presenting teachers offered their thoughts on that and a lengthy conversation took place.

Questions and answers like that occurred throughout the entire conversation around construction of knowledge of those particular test questions. Some teachers offered thoughts as to how students would view those test items and how much they would have to analyze or do any kind of higher order thinking. At one point, Nell said that some photos were unclear and she wanted Kate to note that on the "parking lot" portion of the score grid. (*Parking lot* was explained as a spot on the scoring grid where teachers can "park" pet peeve issues or issues that don't really have to do with the

scoring.) Kate led the team through discussion of all the desired test items. As well as discussion over scores and evidence from the test, there was a great deal of specific discussion over topics from Advanced Placement U.S. History as they related to the construction of this semester exam; I considered this social studies teacher professional conversation. After about 45 minutes, Kate asked if Josh and Luke wanted any more feedback. Josh and Luke reflected on this authentic intellectual work process for a task such as this one. Josh commented that it was a real challenge to write higher-order thinking questions for multiple choice tests but that they must rise to this challenge "if we're going to have standardized tests" and "national tests in general." The session ended after about 50 minutes of discussion on the test Josh and Luke had brought.

English AIW Team. The five English AIW team members met in a teacher's classroom; they sat in a small circle of desks. They had planned to score and discuss one teacher's task over their planned period of time, which was about an hour. They had each brought with them the scoring manual. The group began its work by Lisa offering to facilitate the session and Nikki saying she had brought a task on the novel *The Adventures of Huckleberry Finn* by Mark Twain.

Nikki first explained that the group had seen this task before in another form. She stated this task had already been scored and discussed three years prior, at which time it had been "shredded"—very thoroughly discussed after scoring—and she had not taught it since. In fact, she explained to her team mates:

> I was really pretty ready to scrap it. . . . Even though I've done a number of things to it, the value beyond school was still scoring a 1 all the way across. I think

> students were not very into it, as there wasn't anything interesting for them to do. So I tried to rethink this. . . . There's still one piece left from the original task, and then I have two new writing prompts to go with it. But I'm interested in the value beyond school score. Probably more so, which is a little bit of a switch.

Nikki was now intending to use it again in the near future and so wanted feedback from her team on her revised version. She also explained that she had a second page to the task but was holding that back from the scoring as she was trying to cut back on verbiage for the students based on how her colleagues gave her feedback.

Examination of this artifact showed a one-page, one-sided sheet with a title; "Prompt Option #1," Prompt Option #2," "Prompt Option #3," each with a paragraph of detailed explanation of the prompt; and five bulleted phrases below those indicating how many points were involved, expectations, "in-class work time," a blank for writing in a due date, and a requirement to submit the final assignment to turnitin.com Near the title, there was a small black and white sketch of Huck Finn copied from a version of the book.

Lisa asked Nikki what the task's big idea or the key concept was. Nikki first explained that Huckleberry Finn is in the Green High School American Heritage course, a course that is co-taught by Nikki and a social studies teacher. The English teacher and the social studies teacher plan together to ensure that students understand how American society and literature co-evolved during certain periods of history, in this case, during last quarter of the 19th century. Nikki stated, "The big idea is [that] I want them to think about theme. . . a definite thematic tie-in [to the American Heritage course]." Lisa then reminded everyone that although Nikki asked for value beyond school to receive the

team's attention, they would score all three standards, as is the common practice. She announced the correct scoring manual page numbers to look at and then all fell silent for about nine minutes as they individually scored. Team members wrote on the task and flipped through pages in the scoring manual while they worked individually.

Lisa finished scoring and, while others were finishing, created a scoring grid on the white board in the room. The grid was very similar to the Social Studies AIW Team's for Kate's task, in that it had team members' names down one side and the three standards' names across the top (sample grid, Appendix I). Before posting scores, Lisa asked members if they had any clarifying questions of Nikki. Members asked three clarifying questions, each of which Nikki readily answered. Lisa then called for scores and posted everyone's on the whiteboard chart; she circled some scores that were slightly different from others'. Throughout the ensuing conversation, Lisa then had those team members with the circled scores start the conversation for those various standards. The team next began to discuss their scores, standard by standard, drawing evidence from the task for each comment made. Overall, they used descriptive language, not evaluative language, and used the language from the rubric. For example, one team member stated, "Nothing in the prompt asks them to address characters in any way, shape, or form." All members seemed to have an equal voice, with no one voice dominating the conversation, except that Nikki occasionally explained some of her thinking at length.

Discussion over construction of knowledge in the task followed. While descriptive feedback was given to Nikki, the members did offer suggestions or questions directly to her intermittently, rather than wait until a point further along. For example,

one member stated, “Yeah, I would’ve said that in the first place, but you clarified it in two [Option Two] but not in the first one.” And “Ok, you know how you specify comparison and contract essay in the second one? Is there a format you would recommend for the first one?” Nikki responded, “I thought about that, actually. Is that development by example? You know what I mean.” A team mate answered, “They wouldn’t know, though, where the compare and contrast is.” Another entered, “That’s pretty, you know. . . analysis is what I was thinking.” The team members went back and forth discussing the standard for construction of knowledge. Another question of Nikki was asked, “Is there anything in [Option] 3 that still hangs out as something that could be developed?” Nikki thought out loud about this possibility, including ideas that raised another question from a team member and more thinking out loud from Nikki.

Lisa moved the team on to the discussion of elaborated communication, standard 2. All members contributed again, offering descriptive remarks connecting their scores to evidence from the task as well as suggestions for possible changes. There were lengthy pieces of conversation around standard 2. At one point, Lisa made some connections to advanced placement literature scoring she had done, and tied some unclear language in those prompts to some of her thoughts about the language in Nikki’s prompts. Lisa helped draw this conversation to a close after several minutes.

Lisa then reminded all that standard 3, value beyond school, was the one for which Nikki especially wanted some feedback. The team then had extended conversation about their scores for standard 3 and the evidence they saw in the task. As they talked, Nikki herself recognized some clear improvements she had made from the original task,

through the current discussion, and was pleased with those. She stated, “So I’m happy that it moved up [to a higher score]. But I wasn’t sure if it was where students were really able to take it away and keep it.” Another responded, “And I think that’s hard to know whether they do or not. They still produce a good piece of writing but whether they internalize it.” Another added, “It’s just that. . . consider the extent to which students are asked to iterate themes or concept issues.”

General discussion on the entire task continued, including discussion on viewing this task from a student’s perspective and how students might approach it. Questions were asked about the length of the final draft of the essay, and another conversation took place about what various teachers expect regarding expected number of pages or page length adequate to satisfy the prompt. Nikki commented that a colleague had recently forwarded her an article on the Huckleberry Finn novel which argued that Huck and Tom today would have not been allowed to have the adventures they had as they would have been put on Ritalin. Yet another lively professional conversation followed this remark from the article. Lisa drew down the full conversation and simply asked if anyone had anything else. No one did so the session ended after about 58 minutes.

Additional AIW artifacts. Team members from the English AIW Team, upon my request for artifacts after the team work session I observed, gave me a sample of student work that had been scored and discussed and notes from an observation of instruction that had been scored and discussed using the AIW scoring manual. I received none from the Social Studies AIW Team. Descriptions of English AIW Team artifacts follow.

The sample of student work that had been scored, from early June of 2008, consisted of a stapled packet of four sheets: the teacher task sheet with handwritten notes on it including scores for both the task and the student work; and three sheets of different students' work that showed students' answers to the corresponding task. Notes on the task sheet noted the assignment was from a modern American literature class, given to sophomores and juniors after seniors had left for the year in late May. The assignment on the task sheet asked students to write a conversation that might take place between Harold Krebs, a character in Hemingway's *A Soldier's Home*, and Ron Kovic, a character in Kovic's autobiographical *Born on the Fourth of July*. Other details outlined what the students were to include in the dialogue. Other handwritten notes on the task sheet consisted of scores on sticky notes that outlined the scores given the task, per the AIW scoring manual (standard 1: 2+; standard 2: 4; standard 3: 1), and scores given the sampling of student work (standard 1: 2; standard 2: 2+; standard 3: 2). One other comment on the sticky note noted that "most people in the group moved to a 3 once discussed"—pertaining to standard 2 in the student work. The three pieces of student work were one sheet each, one sided, each handwritten. One had the word "dialogue" at the top, another had "Conversation Krebs & Kovic" at the top, the third had no heading.

The rest of the material was just the handwritten dialogues that three individual students created. There were no handwritten notes from the scorer on the sheets.

The sample of observed instruction that had been scored consisted of a stapled packet of eight handwritten sheets with the date of "13 April 2009" on the top sheet, along with the scorer's name. The teacher, when handing this packet to me, indicated that it was her notes from her observed instruction of a colleague in her English department. The top sheet consisted of short notes under the designations HOT [Higher Order Thinking], DK [Deep Knowledge], SC [Substantive Conversation], and RW [Real World, for *value beyond the classroom*]. These markings correspond to the four standards, in order, found in the last part of the scoring manual artifact for scoring instruction. Sheets two, five, and six of the packet consisted of the observer's scripting of the observed class; *scripting* refers to the observer's continual note taking during class and included such things as columns with titles of "time," "L" [for Lower Order Thinking], "H" [for Higher Order Thinking], "Comments," and "Notes." Under these designations, the observer noted the time a certain activity started, a checkmark to designate whether a lower-order thinking action or a higher-order thinking action took place, notes and quotations as to exactly what was going on in class, and small sketches of "G_1" [Girl1], "G_2" [Girl2), and "B_1" [Boy1] with lines and arrows to show flow of conversation between among students and teacher. Above the Comments column were notes that showed "Q_T → Teacher Question" and C_S → Student Comment." Within the Comments column were the observer's handwritten notes that appear to have noted the teacher's actions, what the teacher was talking about or asking, and students' answers to

those questions within the class time. Other pages in the observed instruction packet showed more observer's notes on such things as how long the various activities took and the physical set-up of the classroom with notes on the student groups. One page was dedicated to individual team members' scores as well as consensus scores and notes on "strengths," "parking lot," "ways to increase authenticity (suggestions)," and what seem to be summary notes on the four standards used in observation of instruction. Looking at the notes under strengths, these appear to be strengths the observed teacher showed, in the eyes of the colleague observer whose notes I examined. *Parking lot* appeared to be a comment from the observer that was simply a comment; it might not have had to do with the actual scoring but was just an observation at a moment in time during the observation. A final page in the packet reflected what seemed to be the final conversation of the team, including a reflective comment from the observed teacher and thoughts from the group over the AIW process.

Looking at the subquestion of the expected processes of working within a professional learning community, and observing two Green High School AIW Teams in action, I am confident several research-based characteristics of professional learning communities were present. Both AIW Teams at Green High School functioned very similarly in their team session structure and conversation protocols during their scoring and discussions of teacher tasks, and the levels of professional conversation were so similar that I can offer conclusions of characteristics for the two teams as a single entity. Those characteristics present were *practice-based discussions, including moving toward high-risk conversation and using artifacts of classroom practice; educator actions based*

on shared purpose, planning, and preparation; workplace relationships promoting collegial work and reciprocal coaching; focusing on learning and results through collegial action; inquiry-driven interaction; and *collective responsibility for student learning.*

In addition, I examined the eight-page packet from a teacher whose notes and scores from an observed instruction showed me evidence of *practice-based discussions including discussion of instruction.* This evidence also supported *practice-based discussions including moving toward high-risk conversations* because of the action of inviting colleagues to observe and discuss classroom instruction. I also examined artifacts of student work used in an AIW team discussion; this pointed directly toward further evidence of *artifacts of classroom practice*.

Subquestion 6: What are the expectations for the work of the professional learning community? The expectations for the work of the AIW Teams at Green High School seem to have been to progress toward making AIW the central professional development method for teachers. I drew data for this subquestion from participant interviews and team work observations. This expectation for the work encouraged teachers, on a regular basis and through scheduled professional learning times, to come together with colleagues to discuss their professional practices, such as creating assignments, looking at student work, and observing instruction, in order to make continual improvements over time in all these aspects.

When asked in interviews to describe the conversations that take place in their AIW team sessions, all participants were very consistent in their responses, from their

overall explanations to using the same terminology. They all expressed that they look at teacher tasks, student work, or live or recorded instruction in order to score those against standards so a presenting teacher might get feedback that helps him or her improve learning for students. They stated that they most often have scored and discussed teacher tasks, with some occasions of scoring and discussing student work and fewer occasions of scoring and discussing classroom instruction. When asked how conversations in AIW team sessions are different from conversations in the past, one participant stated:

> Well, [those past] conversations never took place. We'd be in the workroom and someone would come in and say, 'Oh, I'm so excited. This is what I'm doing today.' And everyone would say that sounds great. That sounds like so much fun, and that's so interesting. I bet the students will love it. You know, that's just how everything was. . . . It was a default happy time." He went on, "And that's not helpful at all. [Imagine] you're a first year teacher, you're doing something, you have no idea what you're doing. . . . Or you think of something good and you say, 'This is what I'm doing,' and someone says it's going to fail miserably. It's a bad idea but do it anyway.

Further, "I don't even have to talk about instruction. People's stories [were] closed on instruction because that's nobody's business."

This participant contrasted these conversations especially to the start up of AIW at Green High School. Early in the school's implementation, this participant offered to have a team of teachers and coaches come into his classroom to observe instruction. Afterwards, when the group was scoring and discussing the instruction, he received rather

low scores of 2 from the coach with the coach giving descriptive feedback and evidence of what she saw compared to the levels in the standard rubric. Two of this participant's colleagues rose up verbally to protect him in that conversation, so the conversation between the coach and the two colleagues became spirited. But the participant, in reflecting on that conversation, stated:

> I tried to make it pretty clear [during that conversation] that this [feedback] is really what I want. This is what I need. And yeah, I'm OK [as a teacher], but I can be a lot better than I am. So I think we all had to get to that point where it's OK. You know, I didn't come in here for everybody to say what a lovely task you have. I came in here because I just finished doing this task and the assignments I got back are not what I wanted. They're not close, and I don't know why.

While expectations for the work seem to have been to move all Green High School teachers to implementing AIW consistently, that was not without struggles, revealed through participant interviews, both administrators and teachers. One struggle was that although Anne, the Green High School principal, envisioned AIW being the central professional development for her staff, there were still occasional requirements from the district for other kinds of professional development for all school buildings in the district. Another struggle was bringing the full, large staff of Green High School into authentic intellectual work. At the beginning, Anne was able to start with two teams that volunteered, were curious and eager to learn about authentic intellectual work, and willingly implemented with very positive attitude. The second year brought more

volunteers, although even among those, there were some teachers a bit reluctant. The third year, when administrators and an AIW coach decided to train the rest of the staff, part in the first semester and part in the second semester, there were many teachers ready for this but also more teachers reluctant, puzzled, and a bit more unwilling to enter into AIW enthusiastically. Coaches, principal, and lead teachers had to work diligently with these teachers to continue to ease their way into AIW so that it could become a school-wide professional learning model. At the time of this study, strides had been made to do that, and the attitudes of some of the later arrivals had become more positive although there was still work to be done.

When asked whether AIW was positively affecting student learning, participants clearly stated that they expected it would, although none had measurable evidence yet and any evidence was anecdotal. Anne, Green High School principal, stated, "Right now I would just have an instinct on it but next year we're going to actually begin looking at ITED (Iowa Tests of Educational Development) scores to see if the implementation is making a difference." Pointing to whether students knew what AIW was about, another stated, "I think in terms of 'why it's good' probably hasn't happened yet, but I think it's catching on. There are certainly some classes where the students know what we're doing." A third participant reported:

> I think it [AIW affecting student learning] is great, actually. I actually did my thesis for a master's last year, and I. . . did some data collection on student performance with scores. . . . I compared the scores students earned in a prior year to the scores earned with the [AIW] revised task, and the scores improved.

Another participant chose to answer this prompt by reflecting on his observation of student learning in AIW in his classroom. He stated:

> Students in advanced placement don't like the new style questions. They're hard. They, unless they're very bright students, would rather be asked, 'Why did Andrew Jackson get rid of the second bank of the U.S.?' than be asked about what Jackson's enmity toward the second branch of the U.S. would be similar to. . . and then discuss Hamilton's views towards a national treasury, William Jennings Bryant's view toward a national sub treasury, and Woodrow Wilson on the creation of the federal reserve. . . . Those are five connected things, a connected theme in history, and [the students need to show] the understanding to be able to analyze.

Another participant, thinking from a teacher evaluation perspective on the impact of AIW on student learning, explained that the central office administration was creating tools to help support classroom observations that "speak to the essentials of effective instruction. . . . [The tool will look at] things like cognitive complexity, research-based instruction, differentiation." When asked if the central office perceives a challenge determining whether AIW has had an effect, the reply was yes. In an overall sense, Green High School AIW team educators had some sense of AIW having an impact on student learning, but evidence was anecdotal or simply hopeful rather than measured or certain at this point.

When asked to characterize relationships in the school, between and among teachers and administrators, regarding the work of their professional learning community,

participants offered comments that ranged from "It really varies" to "Generally we've got pretty solid relations with our teachers and administrative team up there." Another responded with, "It depends on which teacher and which administrator." Another respondent answered with more detail, offering insight into relationships and how those affected the work of the AIW teams:

> I think the teachers are very respectful of each other and work hard to make everyone feel comfortable giving really good feedback because they know that is what the person [presenting teacher] is wanting. . . . As far as administrators, again. . . those of us who like AIW are glad they got us involved and that they've been proponents. They're helping us find time to do it so in that I think that's been good. I think they're too hands off in that they never support teams, and they just talk about AIW. . . but it's frustrating because they don't even really know what they're talking about. . . I think they should sit in on scoring so they know what's happening. I think it would gain a lot of respect from teachers.

An administrator respondent replied:

> I believe that our administrative team provides support for the teachers to do the work, and at the same time I think we provide leadership to keep the work moving to a higher plane. I would hope to the man they would say they feel supported.

At the same time, when asked how all administrators take on a role with AIW, this same respondent stated, "When collaboration time comes, sometimes, not sometimes, but always we have kids around so sometimes an incident becomes the priority rather than going to [AIW] scoring." The respondent went on to explain that the administrators

wished to have as one of their focuses in the coming school year better management of those kinds of issues so that better attention could be paid to several important opportunities. “We just have not done as good a job as we need to do with that,” the respondent stated.

When I observed AIW team work sessions, I noted several items that indicated generally positive working relationships. I noted body language, such as eye contact, sitting up and leaning forward to engage in the work; confident voices participating; and facing and talking to each other. I noted language use that was respectful, professional, and mostly on task with the work at hand. There seemed to be familiarity in the ease of their speech with each other. At the same time, teams occasionally lapsed into somewhat off-task, lighter conversation that started from a phrase a team member said. At one meeting, one team participant spoke of “fleshing out details,” and someone countered with, “as long as we’re not flushing” and all laughed. This lighter camaraderie, occurring in the midst of professional conversation, indicated to me a sense of trust among group members to do the work but allow for lighter moments once in a while.

The subquestion of expectations for working in a professional learning community reflected Green High School’s work at incorporating AIW across a large faculty. Expectations were for working collegially to share and receive feedback on their practices from each other. Responses indicated evidence of the research-based characteristics of *inquiry-driven interaction, collective responsibility for student learning, practice-based discussions using artifacts of classroom practice, educator actions based*

on shared purpose, planning, and preparation, workplace relationships promoting collegial work, and *focusing on learning and results through collegial action.*

Discrepant data In the course of interviewing Green High School participants, I discovered an assumption I had held that I had not realized before beginning to gather data, and this led to data emerging that was unexpected. I had assumed Green High School had never worked with DuFour literature or had done anything along the lines of "DuFour PLCs" and had merely used AIW as the basis of their forming a professional learning community. In the course of interviewing Green High School participants, I discovered, through the answers of three participants, that DuFour literature and activity had indeed been in their background, although not to a great extent, apparently. Anne, Green High School principal, explained that she (and much of the district) had gotten interested in DuFour literature, particularly as that might have applied to helping their struggling students by forming helpful relationships between students and teachers and using the four DuFour questions. Then she became interested in the Model Schools work in my Midwestern state, which capitalized on the rigor and relevance framework of Daggett ("Using the rigor/relevance framework," 2005) which also addressed value beyond school, a concept Anne desired for her teachers. At the same time, however, Anne felt the Daggett framework was more of an "intuitive" tool without a solid research base. They kept with DuFour for two years for the four DuFour questions and connected that work to their essential questions work at Green High School. She stated, however, "The staff [was] not big on studying DuFour." She then discovered AIW through a consultant with the Department of Education in my Midwestern state and felt that

Newmann's research held much better promise for her staff; this was when they entered into the pilot program in 2007 and were then entering their fourth year at the time of this research study. Another participant who brought up DuFour literature explained involvement in much the same way Anne did, by describing the district's involvement in studying DuFour literature, particularly *Whatever It Takes* (DuFour et al., 2004).

One other participant also spoke of DuFour literature he had read years earlier, when asked to recall his perspective of how his school entered into a professional learning community. His remarks were not favorable, however, and he admitted this was "one of his biases." He stated, "I think the DuFours are very bright people. They've given structure to a lot of districts. . . and help the teachers make them better places, but I think the PLC stuff is a little bit too cultish for me." In fact, this participant, in direct response to my terminology question about what his school's community called itself, stated, "One of the things I like [about AIW] in comparison to some of the other movements or theories or programs is that they seem to be a bit more prescriptive, perhaps even down to what you'd call yourself." This participant was clear that it did not matter what their school community used as a term to define itself.

Case 2: Patterns, Relationships, and Themes

I examined, analyzed, and discussed data in the Findings portion of section 4 for Green High School. At the end of each section, I summarized which research-based characteristics were especially evident through analysis of the different research subquestion. By examining the data described in the within-case analysis, three patterns emerged. The first pattern was that all 10 research-based characteristics emerged

consistently in the answers to the same interview questions and in the observations of the AIW teams at work. Again, what broke the pattern was that certain characteristics seemed to have had much less emphasis than others, or at least weaker data supporting the characteristic. One example is that of participants voicing collective responsibility for student learning. While I could infer that this was implicit in the descriptions and the observations I made of Green High School members' work in AIW, I did not hear much language to indicate members felt very strongly about taking *collective* responsibility students' learning. There was some, certainly. The nature of AIW led teachers to talk about their students in class and for others to offer suggestions to a presenting teacher about how to improve, but I did not get a strong sense of "these are all our students, not just my students."

A second pattern that emerged was that of the strength of the characteristic of *practice-based discussions moving toward high-risk conversations, including discussion of instruction, using artifacts of classroom practice*. This was possibly the characteristic that was most prominent in all interview conversations, all AIW team observations and language there, and in artifacts examined. As stated earlier, I did not observe discussion of instruction in the classroom during this study; I did, however, examine an artifact of scored and discussed observation of instruction from a past session, which was described in detail under subquestion 5. The concept of high-risk conversations was also evident from interview responses and team observations. Teachers clearly indicated they felt intellectual risks were being taken while working within their AIW teams. One teacher had asked to have his instruction scored live and then discussed at a site visit with the

lead coach present. Another stated, "If it [taking risk] is done right, if it's approached correctly, professionally that is. . . [it is] making me better and my peers better." Another acknowledged the benefits of taking risks but implied trust must be built first. Another alluded, "There are some eggshell moments that you have to work with," when describing giving and receiving feedback from colleagues. What I found from their responses and conversations in their team work sessions was that AIW helps build a bridge to taking those risks, through the support of a collaborative team.

A third pattern that emerged was that of the characteristic of *inquiry-driven interaction* among educators. From participants' interview answers to the work of the AIW teams, to my observation of those teams in action, to the artifacts I examined, inquiry-driven work was at the heart of AIW. Teachers sought answers and input from colleagues as to why they were not getting expected results from student work. This was work not directed by a district program or directive, but by teachers themselves as they worked to improve their tasks and instruction.

The relationships between and among some of the 10 characteristics (Appendix B) became evident as I examined the data. It seemed that *frequent, job-embedded,* and *ongoing interaction* affected the level of *practice-based discussions, educator actions based on shared planning and preparation,* and even *workplace relationships promoting collegial work.* It seemed that *shared decision making*, including leadership style, affected the level of *collective responsibility, educator actions based on shared purpose,* and *workplace relationships. Practice-based discussions, using artifacts of classroom practice,* affected *inquiry-driven interaction* and *focus on learning and results*. *Practice-*

based discussions moving toward high-risk conversations affected *workplace relationships promoting reciprocal coaching.*

A theme that was evident was that of leadership. Participants commented on it frequently, from praise of Green High School leadership who investigated AIW and first got them involved, to some disdain for the process in place that did not create conditions for the three associate principals to become actively engaged in the work from the beginning. Leadership also mattered in shared decision making, which some felt was a bit absent as sometimes decisions were made solo and top down, yet others felt some decision making was indeed shared with teachers. These contrary views seemed to be a matter of perspective and perhaps how closely teachers had worked with administrators in the past. For example, one participant, who had worked at Green High School for many years on key teacher committees and respected Anne's position, stated:

> There's an expectation that principals [attend] this level of meeting and this level of meeting and this level of meeting. . . . Is Anne at those meetings? I doubt it. I think she goes to meetings when she has to. And I think that if she sees 'This AIW meeting is going to help me [Anne] meet my bigger goals,' she'll be at that bigger meeting.

Yet a different participant stated, "It would be unfair to say she [Anne] needs to take the primary leadership role in every single one of them [initiatives] or she would be completely frazzled. . . . But in terms of being in the midst of it [AIW], really learning the process herself, she's a little more distant." Leadership mattered in shared purpose; participants felt the vision for AIW was shared first among school and district leadership

and then with teachers. Leadership was a topic to which all participants had lengthy answers woven throughout interview responses.

I have discussed my findings through the central research question and the subquestions pertaining to Green High School. I found that all 10 research-based characteristics were present in the professional learning community of this school. Of particular strength of connection to the conceptual framework was the characteristic of *practice-based discussions moving toward high-risk conversations, including discussion of instruction, using artifacts of classroom practice.* Other characteristics had fairly strong ties as well, such as *workplace relationships promoting collegial work and reciprocal coaching*, and *focus on learning through collegial action.*

Comparison of Case 1 and Case 2

Findings. In this section I will offer a comparative analysis across the two cases that will generate new insights or ideas about research-based characteristics in the two high school professional learning communities. I will make a brief observation about discrepant data regarding this comparison. I will then include thoughts on patterns, themes, and relationships from the comparative analysis.

The discrepant data that were mentioned earlier are still evident. There were no separate instances of discrepant data in the comparison of the two cases.

As I looked at patterns, themes, and relationships that emerged from the data inside each case, it seemed to me that each case showed strong connections to some of the characteristics while weaker connections were apparent as well. The remaining characteristics had moderate-to-strong connections or moderate-to-weak. Table 2

displays a matrix of characteristics present in each high school professional learning community with remarks regarding the strength or weakness of presence of characteristics.

Table 2

Presence of Research-Based Characteristics in Each High School and Commentary

	Blue High School		Green High School	
Characteristic	Yes	Remarks, including strength of connection at time of study	Yes	Remarks, including strength of connection
Frequent interaction	✓	Moderate to strong: 2 Wednesdays per month + occasional PD days	✓	Strong: 2 Wednesdays per month + AIW site visits + occasional PD days
Job-embedded interaction	✓		✓	If outside contracted work hours, paid
Ongoing interaction	✓	Strong: Has evolved over 3 years to same-course teachers in PLCs; plans to continue	✓	Strong: Has evolved over 3 years+ to reformulated AIW teams; plans to continue
Inquiry-driven interaction	✓	Strong: DuFour questions, discussed as intended, lead to inquiry	✓	Strong: AIW conversation protocols and scoring manual lead to inquiry
Collective responsibility for student learning	✓	Strong: Participants consistent regarding collective responsibility message	✓	Moderate to weak: Participants' voice on collective responsibility message scattered or implicit only
Practice-based discussions moving toward high-risk conversations, including discussion of instruction, using artifacts of classroom practice	✓	Strong: Practice-based discussion using artifacts Weak: High-risk conversations; discussion of instruction	✓	Strong to Very Strong: Practice-based discussion using artifacts; high-risk conversations; discussion of instruction

(table continues)

	Blue High School		Green High School	
Characteristic	Yes	Remarks, including strength of connection at time of study	Yes	Remarks, including strength of connection
Educator actions based on shared purpose, planning, and preparation	✓	Very strong: Shared purpose Strong: Shared planning & preparation sessions	✓	Strong: Shared purpose through annually-surveyed vision Moderate: Shared planning & preparation sessions
Workplace relationships promoting collegial work and reciprocal coaching	✓	Very strong: Relationships Moderate to weak: Reciprocal coaching	✓	Strong: Relationships Very strong: Reciprocal coaching
Shared decision making, including nonlinear shared leadership among designated building leaders and teacher leaders	✓	Very strong: Shared decision making through constructivist leadership and structure	✓	Moderate: Mix of top-down structure and shared decision making
Focusing on learning and results through collegial action	✓	Strong: Explicit expectations of learning through collegial work Weak: Measurable results of PLCs work	✓	Strong: Explicit AIW expectations of learning through collegial work Weak: Measurable results of AIW work

Note. Abbreviations used: PD: professional development; PLCs: professional learning communities (teams); AIW (authentic intellectual work)

The strength or weakness of the connections to characteristics seemed to have to do with either leadership or the model the school was working with: DuFour or AIW. Examples follow for connections between leadership and strengths or weaknesses of presence of characteristics, for connections between learning model and strengths or

weaknesses of presence of characteristics, and then for a blend of leadership and learning model and strengths or weaknesses of connections.

Connections: Leadership and presence of characteristics. Leaders in both schools advocated for or exerted influence to gain frequent, job-embedded interaction among the educators in their building. Leaders in each building had begun shaping professional learning community with the intention of continuing into the future, providing for ongoing interaction. Leaders in both schools seemed to influence educator actions based on shared purpose, such as that through a leader's vision of school improvement. Jeanie stated she brought what she had learned from the Harvard Process to establish vision at Blue High School that helped shape and define their work. Anne actively sought initiatives for her school, including AIW, which the full staff of Green High School then pursued.

Leaders had a direct connection to whether or not shared decision making was present as a characteristic. In this study, the strength of that connection depended upon the perspective taken of each leader and leaders' perspectives of themselves. Jeanie was looked upon as a leader who practiced almost pure constructivist leadership in helping all educators share in the work of bringing the Blue High School vision for students to fruition. I noted in the data that Jeanie had been known to encourage teachers to learn from collaborative decision-making processes even to the point of making mistakes with decisions and then learning from the mistakes. She seldom had a top-down decision. Jeanie could be termed a *craftsman-constructivist leader*; that is, an "empathetic and effective developer[s] of people" (Sergiovanni, 2005, p. 164) who practice[s] "reciprocal

processes that enable participants in an educational community to construct meanings that lead toward a shared purpose of schooling" (Lambert et al., as cited in Lambert, 2003b, p. 423).

Anne, meanwhile, had a mix of top-down decision making and shared decision making, or something that could be called shared responsibilities, with her Green High School school improvement team and her AIW teacher leaders regarding various aspects of collegial work. The methods of leadership at each high school, constructivist shared leadership and the mix of top-down and shared leadership, seemed to fit into the culture of each high school's professional learning community, respectively, according to participant responses. In other words, I did not detect data that told me, in an overall sense, that each staff preferred a leadership style other than what it had in its high school. One piece of discrepant data noted earlier on this topic, however, came from Amber, a teacher participant at Blue High School. When reflecting on leadership style, she contrasted Jeanie's shared decision making style with a former principal of hers who was "very top-down," as she stated; she reported she preferred Jeanie's style, although she was still getting used to it.

Connections: Learning model and presence of characteristics. The two adopted learning models, the DuFour PLCs model and the AIW model, seem to have exerted an influence on the strength or weakness of presence of some research-based characteristics, perhaps more so than the influence of a leader, at least in the case of AIW. Blue High School adopted the DuFour materials and processes by which the faculty formed teams of teachers first who then decided what to study. From the data it

can be seen that what they studied evolved over time from broad school improvement topics, such as "Climate and Culture," to studying the work of teachers who teach the same course, for example, and who use the four DuFour questions as prompts. Green High School adopted the AIW model, which advocates studying teaching practices by forming small teams of teachers who then follow established conversation protocols and research-based criteria and standards to discuss instructional practices, one teacher at a time.

Both models urged practitioners toward the characteristic of *inquiry-driven interaction.* At the time of this research study, neither model, as understood through participants' answers, team observations, and examined artifacts, used building- or district-directed requirements for study. Each model encouraged teachers to seek answers to questions having to do with improvement of student learning.

Both models were based on the characteristic of *practice-based discussions* among educators. At this point, each model had certain stronger or weaker influences over other components of "practice-based discussions." The DuFour model at Blue High School, with teachers' use of the four DuFour questions on agendas and during meetings, caused teams to discuss teacher practice using artifacts of classrooms practice, such as common assessments. Use of the four DuFour questions encouraged teachers to share ideas and brainstorm, but it did not necessarily move them toward high-risk conversation or observation and discussion of classroom instruction or use of other types of artifacts such as student work. The AIW model at Green High School, as seen through participant answers, team session observations, and examined artifacts, had its greatest strength in

practice-based discussions that moved teachers toward high-risk conversation, and included discussion of teacher tasks as well as observed instruction and student work. AIW seemed to have encouraged a deeper level of practiced-based discussion and associated aspects than the DuFour Model did at the time of this study.

Connections: Leadership and learning model and presence of characteristics. Both the learning models and leadership seemed to have exerted an influence over the strength of presence of three characteristics. *Collective responsibility for student learning* was strong at Blue High School but a bit weaker at Green High School. Strength of this characteristic may have been because of the perception of Jeanie as a very strong collaborative leader at Blue High School. Her persistence of vision for the school, her designation as "head learner," her insistence on her assistant principals being considered "principals" in their active work with the faculty, and her constructivist leadership style may have exerted a faculty-wide perception of the need for Blue High School faculty to think of all students as "our students," and not just "my students" inside individual classrooms. Part of the strength of this characteristic may have resided with the DuFour model's four questions, each of which uses "we"; this may have helped impart a collective sense of responsibility for all students.

This perspective was not the same at Green High School. A more moderate-to-weak view of this characteristic was because of Anne's sometimes top-down, sometimes shared leadership approach; her nonuse (or little use) of her associate principals in AIW; and the fact that perhaps the AIW model does not explicitly impart enough of a sense of collective responsibility for the improved learning of all students across a school.

Workplace relationships promoting collegial work and reciprocal coaching had some mixed strengths at Blue High School but were strong at Green High School. Workplace relationships promoting collegial work may have been directly influenced by the strength and style of leadership of both high schools, but reciprocal coaching was explicitly called for by the AIW model at Green High School. This did not seem to be true with the DuFour model as it was followed at the time of this study.

Focusing on learning and results through collegial actions had the same mixed strengths at each high school. Blue High School, through leadership strengths and style, held strong, explicit expectations of teacher and student learning through collegial work in the DuFour model. Teachers were expected to learn about their students' learning from their "DuFour question" conversations with each other. Green High School, also through leadership strengths and style, held explicit expectations, through AIW, of the focus on both teacher and student learning. Doing authentic intellectual work focused teachers on learning about student learning and results of that learning. Each school, at the time of this study, was weak in knowing exactly how each model was making a measureable difference in student learning, either in the classroom or school wide. However, the administrator of least one school, Green High School, stated that the faculty intended to begin to study ITED (Iowa Tests of Educational Development) scores in a way that would allow them to discern whether AIW was making a difference in the classroom; that work, though, had not begun by the time of this study.

One theme emerged from this comparative analysis of these two particular schools in this particular study. This theme tied directly to the relationships described in

Table 2 and the subsequent discussion on those relationships. The theme was that leadership and learning model both mattered as to whether the research-based characteristics of professional learning communities were present. Had there not been strong leadership at Blue High School, in Jeanie but also in the administrative team with whom she collaborates and co-leads, several characteristics might not have been present: *frequent, job-embedded, and ongoing interaction; educator actions based on shared purpose, planning, and preparation;* and *shared decision making.* Had those characteristics not been present, even with a model such as DuFour materials and processes, other characteristics might have been absent, such as *workplace relationships,* and *focusing on learning and results through collegial action*. Had there not been good leadership and support at Green High School in the person of Anne, and in support from the district, several of the same characteristics might not have been present there: *frequent, job-embedded, and ongoing interaction; educator actions based on shared purpose;* and *shared decision making.*

The learning models each school adopted mattered. At Blue High School, the DuFour model caused *inquiry-driven interaction* and *practice-based conversations using artifacts of classroom practice.* The model contributed to a *collective responsibility for student learning, workplace relationships promoting collegial work,* and *a focus on learning and results through collegial action.* At Green High School, AIW also caused *inquiry-driven interaction* and *practice-based conversations, moving toward high-risk conversations, including discussion of instruction, using artifacts of classroom practice.* The model attributed to a *collective responsibility for student learning*, although in

weaker evidence, *workplace relationships promoting collegial work and reciprocal coaching,* and *a focus on learning and results through collegial action.* Both leadership and learning model mattered in meeting all 10 research-based characteristics of professional learning communities.

I initiated this study based on what I had termed *Learning Model First*, for authentic intellectual work, and *Team Creation First*, for a school adopting DuFour materials and processes. As it turns out, through my data analysis, I discovered unexpected insights directly related to the relationships and theme discussed above. I discovered that each model can be beneficial for schools learning how to operate as a professional learning community, and it did not matter whether a learning model was adopted first, such as AIW, or teams were created first, as in the DuFour model, in this particular study. It did seem to matter that some kind of framework or model was adopted as those provided a basis for implementation and presence of research-based characteristics. AIW provided Green High School with a specific structure, training at the start of implementation, criteria against which to score teacher tasks, student work, or observed instruction, conversation protocols, and coaching. DuFour materials and processes were less structured and prescriptive, but in this study very strong leadership shaped the materials and processes into useful tools for implementation.

Mentioned earlier in this section was the fact that Green High School had been exposed to DuFour materials and processes in an era before and into the beginning of adopting the AIW framework, unbeknownst to me. I felt this exposure was minimal. It perhaps had the effect of exposing the staff of Green High School to the term PLC or

PLCs and to the idea of a faculty acting as a community rather than isolated teachers in classrooms. In fact, based on three participants' interview comments, I believe the learning that went on regarding DuFour materials and processes at Green High School was not necessarily accepted well, or integrated well or for the long term. The district of Green High School studied *Whatever It Takes* (DuFour et al., 2004). When asked if the DuFour discussions were within the starting discussions of implementing the framework of the AIW at Green High School, one administrator participant stated:

> Not so much. Not so much. It's been some discussion points along the way. They've had some discussion points like, 'What kind of school are we? Is it okay to let kids fail?' That's how the DuFour book starts out. But as far as organizationally, no, it's certainly, no, not nearly as prevalent as AIW.

Anne, Green High School principal, in clarifying how the school moved from DuFour to AIW, stated, "So the staff, ah, [was] not big on studying DuFour, but we were doing the questions of DuFour without studying DuFour." A teacher participant, as already noted, stated his views on studying DuFour by commenting "The PLC stuff is a little bit too cultish for me. . . " although he offered that the DuFours "have given structure to a lot of districts. . . and help the teachers make them better places." If there was evolutionary influence moving from DuFour to AIW, it was perhaps in believing AIW, and not the DuFour model, "could make you better" at "doing the [work] of the classroom" as this teacher participant stated. Again, I felt the exposure to DuFour materials and processes at Green High School was minimal and did not substantially interfere with the results of the AIW framework I examined.

Research Questions Summary

My principal research question was the following: *What research-based characteristics of professional learning community are evident in two local high school professional learning communities, each of which took a different approach to community formation?* This central research question shaped the conceptual framework formed through the review of the literature; the six research subquestions flowed from the central question and the framework. My two cases were the professional learning communities of Blue High School and Green High School; evidence gathered from each case showed that all 10 characteristics in the conceptual framework were present in each high school. Through evidence gathered from the six subquestions regarding leadership, the professional development calendar, support, shared vision for the work, expected processes of working within a professional learning community, and expectations for this work, some characteristics showed stronger or weaker degrees of connection to the conceptual framework for each high school, depending on the learning model followed and leadership actions. For example, Blue High School showed very strong evidence of *workplace relationships promoting collegial work* and *shared decision making*, while Green High School showed very strong evidence of *practice-based discussions using artifacts.* Both schools showed evidence of leadership making a difference in how well, or whether, several characteristics were present at all, such as *frequent, job-embedded, ongoing interaction among educators*, and *shared purpose*. Both schools showed weaker evidence for a *focus on results* at the time of this study. Overall, the data I gathered

provided convincing evidence that all 10 research-based characteristics were present in each case.

Evidence of Quality

This study followed procedures that assure the accuracy of the data. I kept a researcher log into which I entered field notes after each interview and all team observations. I triangulated data by interviewing, observing collaborative teams in work sessions, and examining artifacts given to me during or after team observations. After interviewing and observing team work sessions, I immediately transcribed each of those, and while the transcriptions were not perfect in the way a court reporter might transcribe an interview, my assistant and I transcribed them well enough so they were completely understandable and full of direct quotations from which I could draw evidence. I then coded them (as well as the artifacts) according to my coding for analysis chart (Appendix H). An example of a transcribed sheet with handwritten coding and other notes appears in Appendix I.

Using three sources of data allowed me to cross check facts, information, and perspectives of the work of each professional learning community as I analyzed data; made generalizations; found patterns, relationships, and themes; and realized discrepant cases. In addition, I used thick, rich description of interviews, team observations, and artifacts to give full, detailed descriptions of each as I wrote of my findings. I conveyed interactions, emotions, and actual dialogue as often as I found reasonable, particularly when describing the team work sessions and participant interview responses. I member checked participants at both schools to verify several pieces of information I was

analyzing so as to be accurate. By having aggressively addressed methods of trustworthiness of the data, I am confident I have met the potential issue of qualitative research over quantitative.

Section 5: Discussion, Conclusions, and Recommendations

Overview

I completed this study because of a desire to know what research-based characteristics of professional learning communities were present in two local high schools at a given point in time. Each of these high schools adopted a different model in their approach to creating a professional learning community. One model was that of following the DuFour process of creating teams who then decided how and what to study together. The other model was authentic intellectual work (AIW), a framework adopted by several schools in my Midwestern state by which teams of teachers learn to discuss together teacher tasks, student work, and instruction. I desired to know whether the 10 characteristics were present, regardless of which model had been adopted. The case study was conducted over four months in 2010 by means of interviewing five educators in depth at each of two high schools, observing two team work sessions at each site, and examining artifacts from each of those team meetings.

The central research question asked what research-based characteristics of professional learning communities were present during the study. This study found that each of the communities in the two high schools contained all 10 of the characteristics, although some characteristics were more strongly or weakly evident than others, in a different manner, in each community. The stronger and weaker evidence seemed to have depended on the leadership or leadership style in each of the high schools as well as on the model of learning adopted.

Interpretation of Findings

Conclusions Addressing Research Questions and the Conceptual Framework

Conclusions addressing research questions. Following are conclusions about this study, based on each research question. Again, the central research question sought research-based characteristics of professional learning communities at the high school level. Through data gathering and analysis, characteristics were evident, in sufficient enough detail and occurrence, to conclude that both professional learning communities contained all 10 characteristics. Integrated within the conclusions are discussions of the relationship of the findings to the conceptual framework, references to the literature, and, as warranted, practical applications of the findings.

Research subquestion 1: *What leadership style is evident at each school and how does it affect the work of the professional learning community?*

Review of the findings led me to conclude that at Blue High School, a constructivist and collaborative leadership style was evident. Jeanie, the principal, used a *craftsman-constructivist style* as she worked collaboratively with her full administrative team, her building leadership team, and all the PLCs to develop shared vision that involved work toward core beliefs toward student learning. Again, *craftsman-constructivist leaders* are "empathetic and effective developers of people" (Sergiovanni, 2005, p. 164) who practice "reciprocal processes that enable participants in an educational community to construct meanings that lead toward a shared purpose of schooling" (Lambert et al., as cited in Lambert, 2003b, p. 423). Jeanie expressed belief in constructing knowledge together with all these groups to the point of allowing teacher

leaders to make mistakes and then learn from them. Her leadership style affected the work of the professional learning community positively, in Blue High School culture, by allowing all teams to follow inquiry-driven interaction among teachers on the collaborative teams nearly all the time, rather than directed actions. Lambert et al. (2002) noted, "When individuals learn together in community, shared purpose and collective action emerges—shared purpose and action about what really matters" (p. 42). I concluded effective use of all leaders at Blue High School, with regard to the function of the PLC teams, contributed to positive effects.

The findings from the data gathered at Green High School led me conclude that a mix of top-down authority and collaborative leadership style was evident. The principal, Anne, was seen as an administrator who actively sought initiatives and projects to bring to her faculty, such as AIW. Once having brought this work to the school, Anne was seen as a "little distant" from the scoring and discussion work itself, although she was still seen as the leader in charge of the initiative in the school. She was seen as providing some teachers with leadership opportunities within AIW. She was seen as consulting with teacher leaders in the building about the initiative and support for it. It might be accurate to describe Anne's style as one of sharing responsibilities rather than sharing leadership. I concluded there was a general sense of less-than-effective use of associate principals in AIW, as at least three study participants mentioned this absence. Green High School educators in this study wanted Anne to share her leadership a bit more with those associate principals so as to have a fuller sense of leaders and teachers working together in AIW. At the same time, district administrators supported AIW and its

inquiry-driven framework in some key ways, including support of Green High School teams and expansion to other district buildings. Louis et al. (1994) supported inquiry-driven interaction when they stated, "Teachers exercise empowerment, when working in teams or individually, by determining appropriate responses to unique problems" (p. 6), and leaders can create and advocate for the conditions for this to happen.

These findings regarding leadership style, across both cases but in varying degrees of strength at each school, are related to the conceptual framework through the characteristics school leadership enhances and influences: *inquiry-driven interaction; collective responsibility for student learning; educator actions based on shared purpose, planning, and preparation; workplace relationships promoting collegial work;* and *shared decision making*, in particular, as well as in advocating for *frequent, job-embedded,* and *ongoing interaction among educators.* Curry (2008) noted from her study of Critical Friends Groups (CFGs), a concept more or less identical to that of professional learning communities, educators in CFGs felt these communities helped "[foster] shared professional commitments and collective responsibility for student learning. . . de-privatize teacher practice and [support] critical collegiality. . . [and] ensured substantive, focused conversations about teaching, learning, & reform" (p. 769).

Indeed, leadership is key in much of the literature connected to professional learning communities. Donaldson (2006) outlines his *Three Stream Model* for school leadership:

1. *Relationa*l: Fostering mutual openness, trust, and affirmation sufficient for the players to influence and be influenced willingly by one another

2. *Purposive*: Marrying individual commitments and organizational purposes so that the players believe their work is productive and good

3. *Action-in-common*: Nurturing a shared belief that together the players can act to accomplish goals more successfully than individuals can alone (p. 10)

Practical applications exist for the findings for subquestion 1. Local schools, in their investigation of whether to adopt a learning model, should take a critical view of how leaders would lead in order to help the chosen model meet all 10 characteristics. Good leadership is clearly needed to lead not only implementing practice-based discussion, for example, but also for ensuring teachers are able to have frequent and job-embedded interaction time on the school calendar, and that there is a shared vision and purpose for their work. To be clear, exceptionally strong, continually engaged, active leadership is needed to implement the DuFour model. Strongly supportive leadership is needed to implement AIW.

Research subquestion 2: *What is the organizational structure of the school calendar, particularly regarding professional development?*

At Blue High School, the school calendar allowed for Wednesday late starts, with meeting time from 7:50 to 9:05 a.m. Two of those Wednesdays per month were used for PLC team collaboration time. The other two Wednesdays were also used for professional development per district and building direction. In addition, occasional scheduled days or half days were also used for professional development, although not usually for PLCs collaborative team work. Findings led me to conclude the organizational structure of the

school calendar allowed for adequate, job-embedded, frequent professional development time.

At Green High School, the school calendar allowed for Wednesday early dismissals, with meeting time from 2:36 to 3:45 p.m. Two of those Wednesdays per month were used for AIW Team collaboration time. The other two Wednesdays were also used for professional development per district and building direction. In addition, occasional days or half days were also used for professional development for AIW, including coach-led site visits three times per year. Here as well, findings led me to conclude the organizational structure of the school calendar allowed for adequate, job-embedded, frequent professional development time.

These findings are related to the conceptual framework through the characteristics of *frequent, job-embedded,* and *ongoing interaction*. As noted in subquestion 1, strong leadership is often needed to advocate for a school or professional development calendar that promotes effective collaborative team time within a professional learning community. Louis et al. (1994) stated that structural conditions such as time to meet, among others, "can create interdependence among teachers related to classroom practice and foster interdependence elsewhere in the school" (p. 5). Further, Louis et al. cited a study with a small sampling of schools in which one particular high school "stood out on our scatterplots as distinctly above average" (p. 26); at this school there were "frequent meetings across grade levels that focus on curriculum articulation. Teachers are constantly in-and-out of each other's classrooms, and indicate that they feel a strong sense of accountability to each other for the quality of their performance" (p. 27).

Practical applications include advocating for a professional development calendar that allows teachers to collaborate during their contractual workdays, not during unpaid, off-hour sessions. Teachers cannot engage in collaborative, learning-based discussions if time is not provided.

Research subquestion 3: *What support is evident for professional learning community in each school in terms of infrastructure, district, financial, and attitudinal support?*

Based on findings from the data, I concluded Blue High School showed evidence of several kinds of support for professional learning community. Their infrastructure supported changes to their school calendar that allowed for the Wednesday late starts, for shifting their daily bell schedule to accommodate the late start time so that contact time with students per year would not be lost, and for allowing the master schedule to be arranged such that teachers teaching the same courses could have common planning time. The district supported Blue High School's PLCs structure, and in fact, not only supported it but also created the conditions to replicate it across the district. The district also financially supported all the moves of Blue High School's calendar and bell schedules to accommodate the regular PLC teamwork sessions. In addition, attitudinal support was evident throughout all research study participants and team observations.

I concluded Green High School showed evidence of several kinds of support for professional learning community as well. Part of their infrastructure support was evident in the support of district administrators, three of whom attended initial AIW events as the school became a pilot school in 2007. All three administrators, some in greater capacity

than others, continued to support AIW at Green High School. The district also financially supported AIW at Green High School, particularly past the third year in the work, as grant monies were no longer in place. Green High School enjoys attitudinal support of AIW throughout the school, although participants noted attitudes are still adjusting to the work and less than 100% of the faculty is fully and wholeheartedly behind the work.

These findings are related to the conceptual framework most pointedly through the characteristic of *educator actions based on shared purpose, planning, and preparation.* If deliberate actions are not taken to support creating and sustaining a professional learning community—through infrastructure, district, financial, and attitudinal means—this missing characteristic may well portend struggles to establish the professional learning community at all. Several kinds of support are needed to begin and grow a professional learning community. Understanding this link to the conceptual framework could be considered a practical application of this characteristic as well. Lee et al. (1997) concluded from their study, "The optimal organizational form for high schools is more communal than bureaucratic" (p. 142). To create and maintain a *communal* organizational form, such as a professional learning community, another practical application might be to gather support at the school and district level toward common, shared purpose for improvement of student learning.

Research subquestion 4: *Did this professional learning community establish shared vision, mission, goals, and actions for its work? If so, how have those shared components shaped or driven the work of the educators?*

At Blue High School, shared vision began with the vision of Jeanie, building principal. She worked with her administrative team, and then full faculty and building leadership team, to articulate a vision and then create the conditions for the vision to permeate their work of collaboration on behalf of improving student learning. That shared vision helped shape the work of the PLC collaborative teams and keep students at the forefront. Their shared actions included common planning and preparation time during the school day. Examining the findings from the data allowed me to conclude that the professional learning community of Blue High School established shared components that helped drive the work of the educators within, in their PLC work.

At Green High School, shared vision occurred through the established vision statement of the district; shared-vision data had improved over recent years. Working from that, Anne, the building principal, articulated her goals for AIW, which involved all teachers engaging in this framework to improve teacher and student learning. I concluded that Green High School worked through shared vision, which emanated from the district, and that district and principal vision drove the work of the educators.

These findings are related to the conceptual framework through the characteristics of *collective responsibility for student learning, educator actions based on shared purpose,* and *workplace relationships promoting collegial work.* The key relationship between question and characteristic is that establishing shared vision, mission, goals, and actions may translate to the practical application of a collective spirit of "these are our students" and not "these are my students." Another practical application may be that shared goals might help drive teachers toward collaborative, collegial work based on the

shared vision. The study of Lee et al. (1997) identified characteristics of the organization of high schools that were strongly associated with learning, one of which was that "teachers share responsibility for students' academic success, exchange information, and coordinate efforts among classrooms and across grades" (p. 130). Kruse and Louis (1995) stated, "Professional community in a school is strong when the teachers demonstrate five critical elements: 1) reflective dialogue; 2) de-privatization of practices; 3) collective focus on student learning; 4) collaboration; and 5) shared norms and values" (p. 2).

Research subquestion 5: *What are the expected processes of working within a professional learning community?*

Review of the findings led me to make several conclusions. I concluded Blue High School teachers understood the expected processes of working through their DuFour model in collaborative teams, although not every team was as functional as others. Every team observed or team member interviewed understood the responsibility to work from the four DuFour questions and to move beyond the first question, which dealt with content only. Teams understood the expectation of progressing eventually to DuFour questions three and four which pertain to how to ensure learning for all students. The foundation of PLC team sessions was practice-based discussions. I concluded Blue High School educators clearly understood what was expected of working within a professional learning community according to DuFour guidelines.

Green High School teachers understood the expected processes of working through the AIW framework that emphasizes "***construction of knowledge***, through the

use of ***disciplined inquiry***, to produce discourse, products, or performances that have ***value beyond school***" (Newmann et al., 2007, p. 3). This was because each teacher had had to attend an initial AIW training and subsequent site visits, where the research based was discussed and conversation protocols were learned and reinforced. Every team observed or team member interviewed articulated the same message of how an AIW team session worked. The foundation of AIW team sessions was practice-based discussions. From the findings I concluded that Green High School educators also clearly understood what was expected of working within a professional learning community through the AIW framework.

These findings for subquestion 5 are related to the conceptual framework through the characteristics of *collective responsibility for student learning*, *inquiry-driven interaction, practice-based discussions using artifacts of classroom practice, workplace relationships promoting collegial work and reciprocal coaching,* and *educator actions based on shared planning and preparation,* although in varying degrees of strength of connection in each school. Bryk et al. (1999) noted, "Strong professional communities are built on teachers who regularly engage in discussions with colleagues about their work" (p. 754). Marks et al. (2000), from their study, described organizational learning: "Individuals engaged in a common activity in a way that is uniquely theirs process knowledge as members of a collective possessing a distinctive culture" (p. 241). Further, their study's findings "advance an understanding of both the importance of all six dimensions of the capacity for organizational learning—structure, empowerment, shared

commitment and collaborative activity, knowledge and skills, leadership, and feedback and accountability—and the subtle interactions between them" (pp. 260-261).

Practical applications include inquiring schools looking at both the AIW learning model and the DuFour materials and processes to see which may work for encouraging teachers to open their practices to one another, again, considering the leadership caveats I have provided. Extending this practical application, it would be key that a school be able to implement inquiry-driven professional learning and not be driven completely by district-driven directives. Newmann and Wehlage (1995), from their study that looked at four separate studies over multiple years, stated, "We found that professional community improves student learning" (p. 30). Newmann and Wehlage felt professional community was "best described by three features: Teachers pursue a clear, shared purpose for all students' learning; Teachers engage in collaborative activity to achieve the purpose; [and] Teachers take collective responsibility for student learning" (p. 30). Literature supports establishing professional learning communities in schools.

Research subquestion 6: *What are the expectations for the work of the professional learning community?*

Examining the findings from Blue High School led me to conclude that the expectation for this school, through the DuFour model of continually asking the four questions, was to shift their culture from teaching to talking about teacher and student learning and teaching practice in order to make adjustments to instruction. The findings from Green High School data led me to conclude that the expectation was to have AIW become the central ongoing professional development of all teachers so that teacher

tasks, student work, and instruction could be viewed and discussed collaboratively and continually in order to improve student learning in the classroom.

The findings for subquestion 6 are related to the conceptual framework specifically through the characteristics of *collective responsibility for student learning*, *focusing on learning and results through collegial action* and *practice-based discussions moving toward high-risk conversations, including discussion of instruction, using artifacts of classroom practice.* Newmann and Wehlage (1995) noted from their study, "In schools that CORS [Center on Organization and Restructuring of Schools] researchers considered successful, the mission for learning was powerful enough to guide instruction, but also flexible enough to encourage debate, discussion, and experimentation" (p. 30). Newmann et al. (2007) reported that success in AIW teams "requires frequent critical, constructive, and collegial discussions among groups of teachers about the quality of and how to improve the lessons, assignments, and student work" (p. 84). DuFour et al. (2006) stated, "A PLC is composed of collaborative teams whose members work *interdependently* to achieve *common goals* linked to the purpose of learning for all" (p. 3). Further, DuFour et al. stated, "Members of a PLC realize that all of their efforts in these areas—a focus on learning, collaborative teams, collective inquiry, action orientation, and continuous improvement—must be assessed on the basis of results rather than intentions" (p. 5). The expectations for the work of each professional learning community were tied to moving school culture toward teacher and student learning through collaborative team actions that included talking about their classroom teaching practices. Bryk et al. (1999) related that social trust, which is implied

in successful collaborative team discussion, was “by far, the strongest facilitator of professional community. When teachers trust and respect each other, a powerful social resource is available for supporting the collaboration, reflective dialogue, and deprivatization characteristics of a professional community” (p. 767). Practical applications include inquiring schools, through examining a learning model, discerning how they might shift from a culture of teaching to one of learning and results, in an ongoing mode. DuFour et al. (2006) noted, “The process of becoming a PLC is designed to achieve a very specific purpose: to continuously improve the collective capacity of a group to achieve intended results” (p. 152).

Implications for Social Change

This study holds implications for positive social change. The strongest implication is that, in adopting a learning model that builds in presence of research-based characteristics of professional learning communities, schools can bring teachers together regularly to collaborate in teams in order to discuss teacher practices using artifacts of classroom instruction. Teachers gain a sense of collective responsibility toward more students than just the ones in their own classrooms. They work together with shared purpose; they focus on their own learning and the learning of students. These processes are a clear shift away from the isolationism of the past, particularly in high schools, where teachers did not open and share their practices with one another readily or at all. This study, which looked at two local high schools that had adopted different models in forming professional learning community and examined the results of those models, provided a view into the social change possible in the high school setting.

There are tangible improvements for educators and high schools. One improvement is helping teachers realize that thinking and discussing among colleagues about teaching practices can lend new insights into classroom improvements for all. Another is that seeking answers together to inquiry questions can cause focused and more data-driven results for students in the classroom than broader, more externally directed actions. Another is that shared purpose, planning, and preparation can lead to more equitable education for all students in all classrooms. Another is that a focus on learning and results can lead to data-driven decisions and improvements for students. Shared leadership can offer all educators ownership and a sense of making a difference in the educational program in their school, specifically for their school's students. Finally, another tangible improvement is that workplace relationships promoting collegial work and reciprocal coaching may lead to better morale and improved workplace environments, which can attract and keep high-functioning teachers. This has positive implications for our culture and society as a whole.

Recommendations for Action

There are steps to take for useful action. First, those interested in moving away from the historical isolationism of educators in high schools and toward an environment of open, shared, collaborative practice can investigate resources and processes that could make this transition easier. One model to look at is AIW, in my Midwestern state, and another is the materials and processes of DuFour. Attention must be paid to the materials and processes of DuFour, however; it takes exceptionally strong leadership to implement the DuFour model so that it results in the research-based characteristics. DuFour

materials are well written, well marketed, and broadly available; attention must be paid that district or school leaders do not use these materials without fully understanding how to make them effective, and that is through involved, visionary, high-caliber, craftsman-constructivist shared leadership. As AIW is currently implemented in this state, through training, coaches, materials, and support structures, the model itself helps more readily meet the 10 characteristics, with strong supportive leadership an added benefit, particularly for ensuring frequent, job-embedded, ongoing opportunities for teachers to engage in the collaborative work.

Another useful step is for high school or district leaders to take deliberate moves to ensure leadership is shared among building leaders and teacher leaders so that decisions about learning can be considered and made collaboratively, if more traditional, hierarchical methods are currently in place. This might mean reading about teacher leadership and then creating and actively engaging building leadership teams and other teacher-leader teams. Between investigating models for implementation, such as AIW, and ensuring leadership is shared meaningfully, schools can make good decisions, in a collaborative fashion, about how to move a faculty toward becoming a professional learning community with research-based characteristics, a process which might provide meaningful student results over time.

It might be wise for both schools in this study, or any other school looking to create professional learning community, to reflect on their understanding of just what this term means. Recall that I started each interview by asking what term educators used with their smaller teams or full faculty, attempting to find a term each interviewee used so I

could use the familiar term with them in the interview questions. I had prompted participants, “I know some schools call their small teams PLCs, for example, and I just wanted to know if you attach certain terms [to your small teams] or is a ‘professional learning community’ your larger entity here?” While I was simply looking for common language so our interview discussion might flow more comfortably, participants’ answers provided some implications upon which I will make some recommendations..

At Blue High School, the teachers responded they did not call their entire school by any certain term, but two teachers noted aloud that the administrators occasionally referred to a “professional learning community” in the school. Both Jeanie and Mike, principal and assistant principal of Blue High School, respectively, answered that they had tried to get across the concept that a professional learning community is usually the larger school community itself. Mike stated, “We haven’t embraced the notion [of calling our entire staff a professional learning community], not because we disagree with it but because we haven’t gotten there yet with the idea that the school itself is a large community of learners.” Jeanie stated:

> Well, we view the whole school as a learning community but our PLCs are our individual organizations that are within a department. So we tried to change that language. . . not very successfully, so it [the term PLC] is what people knew and we’ve just gone with it.

Based on these answers, it seemed evident that once the staff began studying DuFour materials, the term *PLCs* seemed to resonate with everyone as a term for the smaller teams within the school.

When I prompted the interviewees at Green High School with this question on terminology, one participant responded, "I don't even think about that." Another stated, "In the district we have things like professional learning communities, and Anne uses that term, professional learning communities. We kind of treat it like a generic kind of concept." Another participant stated, "I don't know that the staff uses that [the term professional learning community] widely. I think that seems to be a more common term for an administrator to use." The three teachers answered they refer to their small teams at school as "just AIW teams" which are the smallest component of their content-area department groups. The two administrators each answered that they referred to smaller teams at Green High School as SLCs (Smaller Learning Communities), such as SLC 1 or SLC 2, underneath which are departments and then AIW teams. There was no term given for the larger school community. The principal, Anne, in her answer, and Chris, the district administrator, both referred to the group term "SLC" first. Both Anne and Chris explained a time in the fairly recent past when Green High School and district were the recipients of a grant for working in smaller learning communities (SLC). One teacher briefly mentioned "SLCs" in her reflections on what the school called its small teams, and in fact, this same teacher pondered out loud whether her school might have been a "little better off" had they "integrated [the concept and term of] 'professional learning community' into [our] vocabulary because I think it does step up the purpose a little bit." In general, however, participants' answers were a little scattered as to a term they all use. By the same token, except for the one teacher, participants did not seem concerned by the

fact that there seemed to be no single term used to describe the community at Green High School.

Again, while I was merely looking for conversational common language as our interview started, participants' answers caused me to think about recommendations to offer regarding shared language and concepts. One step both these schools, as well as interested schools, could take is to ensure all educators on staff understand the concepts behind the terms used. While I can appreciate that an educator may argue that as long as a school contains high-quality collaborative teams it should not matter what they call themselves, I think terms and language do matter. Schools need to engage in the work that it takes to become a professional learning community over time, and fully comprehend what that means. It means having both highly engaged, smaller collaborative teams as well as the full school acting as a highly engaged team, and it may take a long period of time to get there. One piece of literature schools might work with is Killion and Roy's *Becoming a Learning School* (2009) in which they explain what a *macro-level* learning community is (the full school engaging in the work) and what the essential *micro-level* learning community is (small collaborative teams engaging in the work). A school does not *do* PLCs at a particular time slot in the week; a school works to *become* a professional learning community over time.

Those who need to pay attention to the results of this study are high school leaders or district leaders if a district is working systemically. Visionary leadership is needed to place ideas in front of others to discuss, examine, and garner support through collaborative efforts. Teachers, however, might also pay attention to the results of this

study and take ideas to their schools and leaders. There exist extraordinary teachers, those who cause positive change to happen from the teacher level upward. They may be fewer in number, and that situation may be more unrealistic. But present school leaders, administrator or teacher, should pay attention to this study if they wish to create or improve upon a professional learning community in their school.

There is at least one way in which the results of this study might be disseminated. Because my job is what allowed me to wonder about local professional learning communities in the first place, my job is now what can allow me to disseminate the information I have discovered about the presence of research-based characteristics in local high school professional learning communities. I am able to publish some information, perhaps in the form of a report or article or on our website, to schools and districts in my Midwestern state for their consideration. Then schools or districts that are thinking about how to create professional learning communities, or perhaps improved communities, can read the results of this study and decide which model might work for them and whether high-quality leadership is a factor in considering a model to follow.

Recommendations for Further Study

Both models, AIW and DuFour materials and processes, led to inclusion of 10 research-based characteristics of professional learning communities, in varying degrees of strength and weakness. There are topics that still need closer examination, however, and questions that arise from this study. Leadership may need closer examination. An oft-repeated question is, *Are leaders born or made*? Pertaining specifically to choosing, for example, AIW or DuFour materials and processes, I might ask, *Can a leader with*

more linear, hierarchical decision-making style learn to share leadership? Can a building leader successfully gain the skills needed to support a school staff as it learns about and implements a model that results in research-based characteristics of professional learning communities? Another question might be, *If a building leader leaves, what happens to the professional learning community?* If that school existed in a professional learning community with shared leadership, it should function beyond that particular leader. But the situation asks the question, *Did the building leader build the "shared-ness" into the culture?*

Further study on the models might be helpful. Questions may arise about the models whose results were examined in this research study, or about materials or models in general whose purpose is to support or build professional learning communities, for example, *Becoming a Learning School* (Killion & Roy, 2009). So questions might be, *Are there other models or materials and processes currently designed that, if studied, would also produce results showing the presence of all 10 characteristics? Would communities of practice and critical friends groups show the presence of the 10 characteristics? If the DuFour materials and processes are studied in a high school with a leader with less than exceptionally strong leadership skills, will all 10 characteristics be present? By the same token, if AIW is studied in a high school with a leader with less than strong supportive skills, will all 10 characteristics be present—is the organizational and implementation structure enough to establish the presence of all 10 characteristics? Considering AIW and the structure and training under which is it currently implemented, is it sustainable beyond the building leader under whom it was first established?* Other

questions that occurred to me regarding what I saw and heard with AIW, which might interest others for a study, dealt with the attitudes of a large faculty toward the work. *Why was a third of the faculty of Green High School reluctant to undergo the training and implementation of AIW? Was it because they were the last third to come on board with the training with no "voluntary" aspect to it, or could it have been because they possibly were a bit intimidated by the risk-taking aspect of it? Or some other reason?* It could be interesting to study how a model is brought to a large high school faculty or, conversely, to a small high school faculty.

Questions may arise from one or more of the research-based characteristics themselves. *How does our profession cause teachers to internalize collective responsibility? How does a district move away from one-size-fits-all directives toward inquiry-driven interaction among educators? What is the best way to gather school, district, and community support to change school calendars to allow teachers to focus on learning and results? How does our profession encourage teachers to take risks with their practice?*

Reflections on the Research Process

As I reflect on this research study, several thoughts come to mind. Throughout the entire study, I deliberately worked to maintain honest and truthful perspectives of my work with these two schools, since I had previously worked with them through my job assignment, details of which were disclosed in section 3. I believe I did do this; I did not let my possible personal preferences for either people involved or results examined from AIW or DuFour materials or processes intrude upon my search for characteristics within

the two professional learning communities. I do, however, have to admit to preconceived notions I held. While I originally thought that few characteristics would be present in Blue High School, the school that had followed DuFour materials and processes, I have now seen that all these characteristics can indeed be present, although I remain convinced it takes exceptionally strong leadership to ensure the model is followed so that all elements within the characteristics, including high-risk conversations, discussion of instruction, and reciprocal coaching, are evident.

AIW, as it is learned and implemented in my Midwestern state, lends itself to addressing all 10 characteristics. I also originally thought that those working in AIW would more regularly express the collective responsibility of the work, but this characteristic was not as strongly evident in the data I collected as I thought it might be. One last preconceived notion I held, and still hold, is that DuFour materials and processes can be attractive to educators, and are well marketed and well advertised. The AIW model, as described in this study, is not, outside my Midwestern state, nor is it *marketed* from a consumer standpoint. If leaders choose the DuFour materials and processes, but exceptionally strong leadership is absent, I do not know whether the characteristics will be in evidence. Finally, I do not know if these thoughts encourage schools reading this study to veer toward DuFour materials or to investigate AIW on their own. I hope they steer toward some viable model of helping them move away from isolationism on the part of classroom teachers.

Concluding Statement

As I think about these findings and conclusions, I am confident there are models and frameworks present that, with implementation through shared leadership, can result in research-based characteristics of professional learning communities. Both AIW and DuFour materials and processes can result in the presence of these characteristics, as this case study revealed. Local high schools that desire to create professional learning community can read this study and consider adopting AIW or DuFour materials and processes. In choosing AIW, teachers hold practice-based conversations by bringing teacher tasks to the table, for example, scoring them against research-based criteria, discussing them, and coaching each other to improve the tasks in terms of construction of knowledge, elaborated communication, and value beyond school. In choosing DuFour materials and processes, with implementation through exceptionally strong leadership, teachers also hold practice-based conversations as they view their commonly-created assessments, ask each other questions such as *What is it we want students to know*, and *How will we know when they know it*, and discuss the possibilities collaboratively. These choices can help high school educators move away from historical isolationism and toward the benefits of collaboration within a professional learning community—and move they must.

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Appendix A: Interview Guide

Interview Guide

Interviewer: Becca Lindahl, doctoral student, Walden University
Interviewee:
Topic: Professional Learning Community at __ High School (pseudonym)
Date:
Time Start:
Time End:
Location:

Qualitative research question regarding this topic:

What research-based characteristics of professional learning community are evident in two local high school professional learning communities, each of which took a different approach to community formation?
Introductory comments to participant, thanks, information on purpose of interview, voluntary nature of this…

Main Questions, Follow-up, probes:

Main Questions	**Possible follow-up Qs**	**Notes**
1) Please explain how your school began its professional learning community.	What literature did you study when you were beginning to form your professional learning community?	
2) In this school, what term or terms do you use when speaking of your community?	Regarding terminology, how do you refer to the larger community group? How do you refer to smaller groups within the larger?	
3) How would you characterize the principal's leadership style?	How would you say the principal's leadership style has affected or affects the work of the professional learning community here at this school? What would be a specific example of how the principal's leadership style affects the work of the teams in this	

Main Questions	Possible follow-up Qs	Notes
	professional learning community?	
4) How does your school's professional development calendar support the work of the professional learning community?	How often does your calendar allow you to meet? For how long? What part of the day do you meet—before school, during school hours, or after school hours? Do you meet in addition to the set professional development calendar? How often? When? Why? Who decides this?	
5) How would you describe this school's mission and vision supporting this school's professional learning community structure?	How did the mission and vision come about? Was there a process to develop these? Who undertook the process—teachers? Administrators? District people? A combination of some kind? In what ways do the mission and vision guide you?	
6) What does the work of your professional learning community look like at a typical session or meeting of doing this work?	Describe a picture for me—what would this gathering or work look like, sound like? Who is doing what? Are there procedures you follow? What would you say is the focal point of your team or group gathering, each time it gathers for work in the professional learning community? Is it different each time? Ultimately, what IS the point of	

Main Questions	Possible follow-up Qs	Notes
	gathering?	
7) How would you describe the conversations that take place during a work session of this school's professional learning community?	Characterize for me the essence of these conversations. In what ways might these conversations be different from group discussions of the past? Do you feel you have taken a risk in any way by participating in the conversations in this professional learning community? By risk, I mean allowing yourself to be vulnerable and open to suggestions to change in your practice. If so, can you characterize that risk for me?	
8) What documents do you bring to or look at during a meeting or work session of your professional learning community and why were those documents selected for a meeting or work session?	Are these documents the same kind of documents each time you meet, or are they different? Are there meetings where you do not bring documents at all? If so, what do you do at those meetings?	
9) How is the work of the professional learning community actually affecting student learning, to the best of your knowledge?	What might be typical teacher take-aways at a typical meeting? Is there any way to know if teacher instruction or student learning is being changed? How so? How are changes coming about? Describe how you might know that.	
10) How would you characterize the relationships between and among the teachers and administrators of this high school?	When you take a balcony view of the staff of this school working in this professional learning community, describe what you see in terms of relationships.	

Main Questions	**Possible follow-up Qs**	**Notes**
	If I ask to see a slice of professional life for you in this professional learning community in terms of collegial relationships, what would I see?	

Appendix B: Research-Based Characteristics to Professional Learning Community

Research-Based Characteristics to Professional Learning Community

Frequent interaction among educators	Practice-based discussions moving toward high-risk conversations, including discussion of instruction, using artifacts of classroom practice
Job-embedded interaction	Educator actions based on shared purpose, planning, and preparation
Ongoing interaction	Workplace relationships promoting collegial work and reciprocal coaching
Inquiry-driven interaction	Shared decision making, including nonlinear shared leadership among designated building leaders and teacher leaders
Collective responsibility for student learning	Focusing on learning and results through collegial action

Appendix C: Research Agreement Information

Research Agreement Information

To: Potential high school educator participants in a descriptive case study

From: Becca Lindahl, researcher; doctoral student at Walden University (and River Valley Educational Agency professional learning & leadership consultant)

Re: Participation in a descriptive, multiple case study

Date: April 15, 2010

Hello. I would like to invite you to take part in a research study called ***A Descriptive Case Study at the High School Level: Research-Based Characteristics of Professional Learning Communities,*** which is being conducted as partial fulfillment of the requirements for the degree of Doctor of Education through Walden University. The researcher is Becca Lindahl, who is a doctoral student at Walden University.

The purpose of the research study is to determine if research-based components of effective professional learning communities are present in a high school whether a learning model, such as Authentic intellectual work, is adopted first, or whether teacher teams are formed first and then teams decide topics of interest or study. My role will be to gather data regarding your professional learning community by holding interviews, by observing teacher teams in action within the professional learning community, and by examining artifacts of teacher team work. My role will be to generate data; this will also be your role. This is my intent for data collection, although that data collection may evolve during the course of the study.

If you agree to be in this study, your role will be to do the following:

- Answer questions in a one-on-one interview, if you are selected for an interview, through the support of an audiocassette machine, with the researcher interviewing you once during a three to four week period between roughly the middle of April to the end of May 2010. This interview will last approximately 60 minutes. The questions are open-ended questions regarding your perceptions of the work, structure, attitude of leadership toward, and effectiveness of the teams, professional development, and professional learning community in your school. There may be follow-up questions in the interviews that occur naturally.
- Allow the researcher to observe you in a team meeting that has to do with the professional learning community learning structure in your school. The researcher prefers that these meetings last at least an hour, although there may some flexibility on

this. The researcher will be present at the meeting to take notes while not participating with the team's educators. The meetings will be audio taped and may be video taped as well for use only by the researcher.

- Allow the researcher to examine documents from the work of the participants' collaborative teams, including but not limited to, meeting notes, artifacts of conversation, common assessment materials, meeting reflection sheets, or templates used during meetings or team work.
- You may be asked to help member-check preliminary findings of trends and patterns the researcher sees. This means you will have the opportunity to comment on written preliminary findings of trends to see if you agree with those to ensure that the researcher is analyzing data accurately.

While your personal responses to the interview questions will be recorded, you will not be identified in the study. All of your answers will be through use of a pseudonym. The name of the school will be a pseudonym.

Your participation in this study is voluntary, particularly regarding interviews. As well, if the researcher is observing a team meeting, you may voluntarily decide to not be an active member of that team that day, even though you may be in attendance on the periphery. Everyone will respect your decision of whether or not you want to be in the study. If you decide to join the study now, you can still change your mind later. If you feel stressed during the study, you may stop at any time. You may choose to not answer any interview questions you feel are too personal.

There is no preparation necessary for answering questions in the interview, or for being part of your team during an observation I make (unless it is preparation for the team work itself). I am looking to observe and examine educators in their natural setting in the professional learning community of your school. I intend to check in via e-mail or other electronic means with each participant during the study at least once to actively discuss how you perceive the research process. While I have set boundaries for the study (looking for the presence of research-based characteristics of professional learning communities), that does not mean there might not be changes necessary to those boundaries as the study unfolds. Participants have a right to know if those boundaries change; I will inform participants of any changes as applicable.

At the end of the study, I will share final results with participants. The date of this report will be given to participants when that time gets closer. All data from the case study will be kept by me, the researcher, for five years after publication of the study.

Last, while it is true that I am your direct support person from River Valley Educational Agency, the role I'm taking as researcher during the times of interview, observation, or artifact examination means I will not take part in my usual position, which is to enter into your meetings as an active participant, for example. For the study, I will observe your team meetings as a neutral researcher but not participate as I often might.

If you have any questions, I can be reached at (e-mail address) or by phone at (phone number).

Thank you in advance for your consideration of participating in this research study whether by selection for an interview or being observed in a team setting.

Becca Lindahl

Appendix D: Informed Consent Form

Informed Consent Form for Participation in a Research Study

You are invited to take part in a qualitative research study of high school level professional learning communities. You were chosen because you are an educator who is actively participating in your school's professional learning community and have knowledge of the work in your professional learning community. Please read through this consent form and ask any questions before agreeing to be part of the study. This research study is being conducted by a researcher named Rebecca (Becca) Lindahl, who is a doctoral student at Walden University.

Background Information:
The purpose of the research study is to determine if research-based components of effective professional learning communities are present in a high school working in a professional learning community, whether a learning model, such as authentic intellectual work, is adopted first, or whether teacher teams are formed first and then teams decide topics of interest or study. The researcher's role will be to gather data regarding your professional learning community by holding interviews with you and other educators, by observing teacher teams in action within the professional learning community, and by examining artifacts of teacher team work.

Procedures:
If you agree to be in this study, you will be asked to:

- Answer questions in a one-on-one interview, if selected for an interview, through the support of an audiocassette machine, with the researcher interviewing you once during a roughly three to four week period between mid-April and the end of May 2010. This interview will last approximately 60 minutes. The questions are open-ended questions regarding your perceptions of the work, structure, attitude of leadership toward, and effectiveness of the teams, professional development, and professional learning community in your school. There may be follow-up questions in the interviews that occur naturally.
- Allow the researcher to observe you in a team meeting that has to do with the professional learning community learning and structure in your school. The researcher prefers that these meetings last at least an hour, although there may some flexibility on this. The researcher will be present at the meeting to take notes while not participating with the team's educators. The meetings will be audio taped and may be video taped as well for use only by the researcher.
- Allow the researcher to examine documents from the work of the participants' professional learning community team, including but not limited to, meeting notes,

artifacts of conversation, common assessment materials, meeting reflection sheets, or templates used during meetings or team work.
- You may be asked to help member-check preliminary findings of generalizations the researcher sees. This means you will have the opportunity to comment on written preliminary findings of generalizations to see if you agree with those to ensure that the researcher is analyzing data accurately.

Voluntary Nature of the Study:
Your participation in this study is voluntary, particularly regarding interviews. As well, if the researcher is observing a team meeting, you may voluntarily decide to not be an active member of that team that day, even though you may be in attendance on the periphery. Everyone will respect your decision of whether or not you want to be in the study. If you decide to join the study now, you can still change your mind later. If you feel stressed during the study, you may stop at any time. You may choose to not answer any interview questions you feel are too personal.

Risks and Benefits of Being in the Study:
This research study will ask selected high school educators to identify and explain their perceptions about the work, structure, attitude of leadership toward, and effectiveness of the teams, professional development, and professional learning community in their school. The researcher will observe professional learning community teams in action and will examine artifacts of the work of a professional learning community. The researcher will also remind all participants that they have the freedom to withdraw from the study at any time. Benefits to the high school educators in the study include opportunities to explain their attitudes toward their professional learning community, explore their perceptions of leadership support of their school's professional learning community, as well as see results of the researcher's observations of team work time. The high school educators may glean a deeper insight into their own professional learning community practices.

Compensation:
There is no compensation for participating in this study.

Confidentiality:
Again, participants are assured that anonymity is retained throughout the study, particularly through responses given in the one-on-one interviews. Participants' responses linked to their identities will not be shared with administrators or colleagues. The school's name is a pseudonym. Signed informed consent forms are kept for five years by the researcher and then destroyed.

Contacts and Questions:
The researcher's name is Rebecca (Becca) Lindahl. The researcher's Walden University faculty advisor is Dr. Sharon Canipe. If you have any questions now on the research

study, you may ask Becca via e-mail at (e-mail address) by phone at (phone number). You may reach Dr. Canipe at (e-mail address)

The researcher will give you a clean copy of this informed consent form to keep, via e-mail.

Statement of Consent:
I have read the above information. I have received answers to any questions I have at this time. I am 18 years of age or older, and I consent to participate in this study, whether selected for an interview or by being observed in a team meeting.

Printed name of participant:

Participant's written or electronic signature*: Date:

Researcher's written or electronic signature*: *Rebecca Lindahl* Date:

* Electronic signatures are regulated by the Uniform Electronic Transactions Act. Legally, an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically.

Meeting Configuration (what the physical space looks like):

Appendix E: Guide for Team Meeting Observation

Time	Team and/or Individual Actions	Charac- teristics Observed	Other Notes

Note. Research-based characteristics, as found in Appendix B

Appendix F: Transcript Template

Name of participant:
OR Name of team:
Date of transcription: Date of data collection:
##
B: Becca __ : _________ (initial and name of interviewee)

Start transcription here:

Appendix G: Sample Transcript Segment

B: Ok, all right. Do you bring any other types of documents?

V: Agenda, computer, that's about it though.

B: Student work? How do you or do you …..

V: I think of documents as being paper but yeah, student work because so much of our student work is recorded and online; we use that constantly in those meetings. And I would assume other teachers are bringing in worksheets or paper or whatever it is that they're collecting.

B: Ok. That's clearer then, thank you. Would there be meetings where you don't bring documents or material at all?

V: There were at first. Like I said at first it took us a couple of weeks, maybe even a couple of months to really break out of the mold of the old department meeting and break into the student focused meeting, but yeah.

B: Ok, all right, thank you. How is the work of the PLC here actually affecting student learning, to the best of your knowledge?

V: Well, for us it has completely changed the approach of the music department. Whereas we are not having a common knowledge for rhythm teaching common language, um, we are, like I said, doing assessments—both pre- and post- tests at the beginning and end of the year. That literally every music student is taking the same test, and we're measuring that learning that way. So that simply didn't happen before.

B: So is there a way to know if teacher instruction has actually changed?

V: Anecdotally I would say we will always bring to meetings Well I tried this or I've been reading this book and I'm going to try this. As I walk past classrooms I see a change in teaching but not as much as I would like sometimes, and I include myself in that. Absolutely…but yeah we're moving… we're changing the way that we deliver instruction.

B: Give me one brief description of how you're improving instruction.

V: It's just so much more focused now on the areas that we know are weak. Um again, we just assumed a level of knowledge that wasn't there before. So we just … we're focusing on those areas, and we might have some other things fall off the table—we'll have to see what happens.

B: Ok. Thank you. How would characterize the relationships between and among the teachers and administrators of this school?

V: For the most part I would say great. I don't know a lot of the teachers. Part of that is me being way down on the north end of the building, part of it's being naturally shy, but a lot of it is there's just not a reason for bringing us together a lot of the time. I would say that we have gone through a couple of really difficult years from a budget standpoint, from a splitting into multiple systems standpoint, from turnover at central office standpoint where there are a lot of teachers that have kinda felt like it's you just you turn the corner and there's another freight train barreling down on you. But I would say that we, for the most part, feel incredibly supported from our administrators in this building, and really from a teacher to teacher perspective too, so it's as good as you could possibly expect. Especially considering the issues that we've been dealing with as a district here these last couple of years.

Appendix H: Coding for Analysis

Research-Based Characteristics to Professional Learning Community

Code	***Characteristic***		***Code***	***Characteristic***
1 Frqint.ed	**Frequent interaction** among educators		6 PB Disc	**Practice-based discussions** moving toward **high-risk conversations**, including **discussion of instruction**, using **artifacts of classroom practice**
2 Jbembint	**Job-embedded** interaction		7 Act Shar PPP	Educator **actions** based on **shared purpose, planning, and preparation**
3 Ong	**Ongoing** interaction		8 Rel➔ PeerC	Workplace **relationships** promoting **collegial work** and **reciprocal coaching**
4 Inq	**Inquiry-driven** interaction		9 SDM	**Shared decision making**, including **nonlinear shared leadership** among designated building leaders and teacher leaders
5 Coll	**Collective responsibility** for student learning		10 Focus- LR	**Focus**ing on **learning and results** through collegial action

Appendix I: Sample Coded Transcript Sheet

would say that it has defused the building centered pd plan and it has certainly defused our sense of coming together as a building on certain days, everybody in a room together and doing pd. There are teachers that teach here now that I see at the beginning of the year school meeting you know everybody's all together and then I really don't see very often because of schedules and things. So I would say it has taken away a little bit the sense of a cohesive overall building team here.

Taken away Coll as a whole but still present in teams

Coll - not ?

B: Now tie in what you just said what're you thinking of mission and vision though?

T: Well I would say that the mission has become more focused. Maybe at the expense of us knowing each other as well. But how I put it delicately? There is never a meeting that I walk away from with a stack of multi colored paper and just put in a folder saying well I'm not gonna use that again and there have been pd times where that's happened. I would say now you go you talk about the kids learning and you move on with the day. So I would say it's focused the mission again down to that idea we're gonna know exactly where Johnny and Susie are weekly if not more often than that.

KEY

Focus LR

B: How did you just described that it's narrowed it down to this mission of focusing on the students. How did that come about? Just by default or did someone articulate that this will be our mission I mean lots of schools have mission statements do you have one that articulates.....

T: Right. I woudn't be able to tell you. I'm sure we do somewhere. I think this is just my personal sense that again because they've given us such freedom an in my opinion trust as professionals um educational professionals to do this work that a lot of the teams and I haven't sat in on every meeting by any stretch of the imagination but a lot of the teams have really taken that and run with it. Again I think you know there is that idea that there's never a wasted you know we gotta have a meeting because it's Wednesday early dismissal and you know they're gonna hand out like I said some multi colored packet of something. It we just don't have that anymore so I think it's we're really the teachers I've talked to really appreciate being able to do education work you know it's never a meeting for the sake of having it.

Ing

ActShaPPP

Rel → PeerC

B: Ok alright, thank you. Um what does the work of your plc let me start again. What does the work of your plc look like at a typical session or meeting? When you have your small plc teams what does that work actually look like. Give me describe a picture for me.

T: Well I'd say that's probably one of the things we had to work through the most. And I think if the teams were not chosen carefully(319)or if they got too large I can see that being a real issue. It took us at our music level here at the building it took us a while to break out of the what's on the calendar for this week who's got a concert where do we have to move things to the stage. Those types of

Appendix J: Professional Development Calendar for the District of Blue High School

2010-2011 School Calendar (Public)

August 18, 2010 – May 25, 2011

Summary of Calendar
Days in classroom:
First Semester 90
Second Semester 90
TOTAL CALENDAR DAYS **180**

CALENDAR LEGEND
Holidays
Vacation Days
No School
Late Starts
First / Last Day of school

LATE START DAYS:
Aug 18, 25
Sept 1, 8, 15, 22, 29
Oct 6, 13, 20, 27
Nov 3, 10, 17
Dec 1, 8, 15, 22
Jan 5, 12, 19, 26
Feb 2, 9, 16, 23
Mar 2, 9, 23, 30
Apr 6, 13, 20, 27
May 4, 11, 18, 25

HOLIDAYS:

Labor Day	(9/6)
Thanksgiving Day	(11/25)
Christmas Day	(12/25)
New Year's Day	(1/1)
Martin Luther King Jr. Day	(1/17)
President's Day	(2/21)
Memorial Day	(5/30)

M	T	W	Th	F	Student Days
August					
16	17	18	19	20	3
23	24	25	26	27	8
30	31				
September					
		1	2	3	13
6	7	8	9	10	16
13	14	15	16	17	21
20	21	22	23	24	26
27	28	29	30		
October					
				1	31
4	5	6	7	8	36
11	12	13	14	15	40
18	19	20	21	22	45
25	26	27	28	29	50
November					
1	2	3	4	5	55
8	9	10	11	12	60
15	16	17	18	19	65
22	23	24	25	26	67
29	30				
December					
		1	2	3	72
6	7	8	9	10	77
13	14	15	16	17	82
20	21	22	23	24	85
27	28	29	30	31	
January					
3	4	5	6	7	90
10	11	12	13	14	95
17	18	19	20	21	99
24	25	26	27	28	104
31					
February					
	1	2	3	4	109
7	8	9	10	11	114
14	15	16	17	18	119
21	22	23	24	25	123
28					
March					
	1	2	3	4	128
7	8	9	10	11	132
14	15	16	17	18	132
21	22	23	24	25	137
28	29	30	31		
April					
				1	142
4	5	6	7	8	147
11	12	13	14	15	152
18	19	20	21	22	157
25	26	27	28	29	162
May					
2	3	4	5	6	167
9	10	11	12	13	172
16	17	18	19	20	177
23	24	25	26	27	180
30	31				

Date	Events
Aug. 18	First day of school (Late start) Begin 1st Semester
Sept 6	No School – Labor Day
Sept 7	No School – Staff Development
Oct 7	and Conferences (4:30 – 8:30 pm)
Oct 11	No School – Staff Development Conferences (4:30 – 8:30 pm)
Oct 12	and Conferences (4:30 – 8:30 pm)
Oct 14	Conferences (Scheduled by teams)
Nov 15-20	K-5 Conferences (Flexibly Scheduled)
Nov 18	K-5 Conferences (4 – 8 pm)
Nov 24-26	No School – Thanksgiving Holiday
Dec 23-31	No School - Winter Break
Jan 7	Last day of 1st semester
Jan 10	First day of 2nd Semester
Jan 17	No School - Martin Luther King Day
Feb 7	Conferences
Feb 21	No School - President's Day
Feb 22-24	K-5 Conferences (Flexibly Scheduled)
Feb 24	K-5 Conferences (4 – 8 pm) Conferences (4:30 – 8:30 pm)
Feb 24	Conferences (4:30 – 8:30 pm)
Feb 28	Conferences (4:30 – 8:30 pm)
Mar 1	Conferences (4:30 – 8:30 pm)
Mar 3	Conferences (Scheduled by teams)
Mar 11-18	No School - Spring Break
May 25	Last day of school * (Late start)
May 30	No School - Memorial Day

*Any days missed will be added to the end of the calendar.

Board Approved: January 4, 2010

Appendix K: Master Schedule with Common Planning Times for the Language Arts Department at Blue High School:

TEACHER	EARLY BIRD 7:25 - 8:20	PERIOD 1 8:25 - 9:10	PERIOD 2 9:15 - 10:00	PERIOD 3 10:05 - 10:50	PERIOD 4E (EARLY) 10:55 - 11:40	PERIOD 4L (LATE) 11:25 - 12:10	PERIOD 5E (EARLY) 11:45 - 12:30	PERIOD 5L (LATE) 12:15 - 1:00	PERIOD 6 1:05 - 1:50	PERIOD 7 1:55 - 2:40	PERIOD 8 2:45 - 3:30
LANGUAGE ARTS											
Teacher A		Contemp Lit 443	Contemp Lit 443	**Common Plan Eng 10**		English 10 443		English 10 443	English 10 443	English 10 443	
Teacher B		Hon. Eng II 425	Hon. Eng III 422	**Common Plan Eng 10**			Hon. Eng III 414		English 10 414	English 10 414	English 10 414
Teacher C			Hon. Eng I 441	Hon. Eng I 441	Hon. Eng I 441		Hon. Eng I 441		Hon. Eng III 441	Hon. Eng III 441	**Common Plan JR/SR Eng**
Teacher D		English 10 431	English 10 431	**Common Plan Eng 10**		English 10 431		English 10 431		Hon. Eng I 431	Hon. Eng I 431
Teacher E		American Lit 434	American Lit 434	English 10 434		English 10 434			**Common Plan Eng 10**	Adv. Comp 434	English 10 434
Teacher F			**Common Plan JR/SR Eng**	Contemp Lit 433	World Lit 433		American Lit 433		American Lit 433	Reading Strategies 433	Contemp Lit 433
Teacher G		English10/Western Civ 630/640		American Culture 630/640					**Common Plan Eng 10**	Public Speaking 640	Public Speaking 640
Teacher H		Hon. Eng III 442	Creative Writing 442	Hon. Eng III 442			Hon. Speech 442		Hon. Eng III 442	Creative Writing 442	**Common Plan JR/SR Eng**
Teacher I		Public Speaking 413	English 10 433	**Common Plan Eng 10**		English 10 422		Public Speaking 422		English 10 / Western Civilization 345	
Teacher J		Adv. Comp 441	Hon. Eng II 413		Hon. Eng III 413		Hon. Eng II 413		Hon. Eng I 413	Hon. Eng I 413	**Common Plan JR/SR Eng**
Teacher K		English 10 610	Hon. Speech 610	English 10 610	Hon. Speech 610		Comm. Skills 610		**Common Plan Eng 10**		Hon. Acting 610
Teacher L		Yearbook 422/432	**Common Plan JR/SR Eng**	Composition 422			LUNCH		composition 422	Journalism 422/432	Publications 422/432
Teacher M		Resource 412	Resource 412	Resource 412	Resource 412			Resource 412	Resource 412	Resource 412	Resource 412

2nd semester

Appendix L: Professional Development Calendar for the District of Green High School

2010-11 CALENDAR AT-A-GLANCE

AUGUST 2010

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

SEPTEMBER 2010

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

OCTOBER 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

NOVEMBER 2010

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

DECEMBER 2010

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

JANUARY 2011

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

FEBRUARY 2011

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

MARCH 2011

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

APRIL 2011

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

MAY 2011

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JUNE 2011

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

■ No School
▒ Other

Aug 25	School begins for K-12
Sept. 6	Labor Day — No School
Sept. 27	Professional Development — No School
Oct. 11	Professional Development — No School (Only [illegible] in session)
Oct. 28	End of First Quarter
Nov. 18	End of First Trimester
Nov 24	No School
Nov 25-26	Thanksgiving Holiday — No School
Dec 22-31	Winter Break
Jan 3	Classes Resume
Jan 14	End of First Semester and Second Quarter
Jan. 17	Professional Development/Staff Work Day — No School
Feb. 18	Professional Development/Staff Work Day — No School
March 11	No School
March 14-18	Spring Break
March 21	Classes Resume
March 30	End of Third Quarter
April 29	Building Goals/Collaboration — No School
May 26	Last Day for Seniors
May 26	Graduation
May 29	Graduation
May 30	Memorial Day — No School
June 3	Last Day for Students — End of Second Semester, Third Trimester and Fourth Quarter

Homecoming 2010
Game Fri., Oct. 15
Dance Sat., Oct. 16

*Collaboration Schedule: All schools will dismiss 45 minutes early every Wednesday beginning Aug. 25, 2010
*Any student days missed during the 2010-11 school year will be made up beginning Mon., June 6, 2011.
*The end of first semester will be Jan. 14, 2011, as scheduled

Appendix M: Standards and Scoring Criteria for Tasks in Any Subject

(Newmann et al., 2009; reprinted with permission)

Standards and Scoring Criteria for Tasks in Any Subject

The research on AIW focused on Language Arts, Mathematics, Science, and Social Studies, but teachers interested in applying the standards to other subjects can use the following standards, criteria, and scoring rules as appropriate for those subjects.

Standard 1: Construction of Knowledge in ______________________

(specify subject)

The task asks students to organize, interpret, analyze, synthesize, or evaluate information in addressing a concept, procedure, or problem, rather than to retrieve or report information as previously given, or to repeatedly apply previously learned procedures, facts, or definitions.

Demands for any **ONE** of these cognitive operations (organize, interpret, analyze, synthesize, and evaluate information) signifies an expectation of construction of knowledge because each is a departure from reproducing information as is customary in tasks that ask students only to state previously learned information, definitions, rules, and procedures.

Prior to scoring, scorers should attempt to identify and list as part of their scoring guidelines illustrative indicators of task demands for students to organize, interpret, analyze, synthesize, or evaluate information in the subject being scored.

A task can be determined to make these demands of students either through explicit written instructions from the teacher or, if instructions are vague, by inferring that the task, even without explicit instructions to organize, interpret, analyze, synthesize, or evaluate information, could be successfully completed **only** if students created a new interpretation or understanding, and not by reproducing an interpretation that they had been given.

SCORE	CRITERIA	NOTES
3	The task's dominant expectation is for students to organize, interpret, analyze, synthesize, or evaluate information in the subject rather than merely to reproduce information, or to repeatedly apply previously learned facts, definitions, and procedures.	
2	There is some expectation for students to organize, interpret, analyze, synthesize, or evaluate information in the subject rather than merely to reproduce information, or to repeatedly apply previously learned facts, definitions, and procedures.	
1	There is very little or no expectation for students to organize, interpret, analyze, synthesize, or evaluate information in the subject The dominant expectation is for students to retrieve or reproduce fragments of knowledge, or to repeatedly apply previously learned facts, definitions, and procedures.	

Appendix N: Sample Chart Used for AIW Scoring in Teams

	St. 1 Construction of Knowledge	St. 2 Elaborated Communication	St. 3 Value Beyond School
Teacher name			
Teacher name			
Teacher name			
Teacher name			