AN EXPLORATORY INTRA-SCHOOL STUDY OF HOW PROFESSIONAL LEARNING COMMUNITIES HAVE BENEFITTED A HIGH PERFORMING SOUTHWESTERN PENNSYLVANIA MIDDLE SCHOOL

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Submitted to the Graduate Faculty of

the School of Education in partial fulfillment

of the requirements for the degree of

Doctor of Education

University of Pittsburgh

2013

UNIVERSITY OF PITTSBURGH

SCHOOL OF EDUCATION

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The purpose of this study was to explore the extent to which teachers in one high performing Southwestern Pennsylvania Middle School view the model and use of Professional Learning Community teams in their school with an existing survey instrument. Twenty-three of twenty-four teachers participated in this voluntary mail survey.

The researcher used Shirley Hord's *School Professional Staff as a Learning Community* survey instrument in an attempt to measure the maturity level of Professional Learning Communities within one high performing middle school. Prior to this study, the survey was used to compare schools to other schools.

Upon receiving completed surveys, the researcher, based on Frick and Semmel's (1978) use of marginal agreement, measured observer agreement in three seventh and three eighth grade Professional Learning Communities. In doing so, the researcher provided summary tables of the variation within teams and grade levels.

Further data analysis led the researcher to recognize that many participants responded to survey items with a four or five on the survey's five point Likert scale. Also, the survey's format included descriptions only under the 1, 3, and 5 rating levels that were designed to measure maturity. Additionally, the descriptions were written in a vague manner which does not measure the maturity or internal processes of the school, evidence of change, or the school's high ranking.

While it is important to see the number of responses to the specific questions of the survey's five constructs, it is equally important to have data that demonstrate the lack of overall observer agreement so that teachers and administrators are aware that the survey itself is insufficient for measuring the maturity of Professional Learning Communities within one school.

Finally, after making several recommendations for school administrators and teachers with regard to Professional Learning Communities and school policy, it is important for individual schools to do their own research and recognize that the administration of one survey on one occasion may not provide adequate data for program planning and/or evaluation.

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1.0   DEDICATION

It is my distinct pleasure to dedicate this dissertation to my family: James L. Shasteen (late father); Cheryl D. Shasteen (mother); and Mark Shasteen (brother). My family has always been there for me through "thick and thin." If it were not for the encouragement, support, love, strong work ethic, and lessons I have learned from each of these individuals, the journey to earning my Doctor of Education in Administrative and Policy Studies at the University of Pittsburgh would have been much different. These individuals have taught me that if something is important to me, I must keep moving toward achieving the goal; otherwise, I could regret not having tried.

2.0   ACKNOWLEDGEMENTS

Dr. Schuh, who carefully examined my methodology before beginning my actual study, provided me and others in the Disciplined Inquiry course with many helpful resources and different ways in which educational research can be approached and applied. I thank Dr. Schuh for insisting that I keep a running database of where I keep each individual source I have and that I keep the original data for a long period of time in case I would ever need to refer to it. Once I had a plan for the methodology I was going to use for my research, Dr. Schuh was adamant that I use a calculator to make certain that I can calculate various figures before I refer to Microsoft Excel, for example. In fact, Dr. Schuh insisted that I make my study and calculations clear for my readers by showing the actual calculations beneath each of the contingency tables used later throughout the study. I appreciate the time Dr. Schuh has spent reading my work and insisting that I recalculate the figures I first put on paper so that I could ensure total accuracy.

3.0   INTRODUCTION TO THE STUDY

Since its inception, public education in the United States has gone through a continuing series of attempts to improve the learning of our students. Over time these various plans and prescriptions have had mixed success. This has been despite the fact that all reform movements over the history of public education have been rooted in a common ground, a commitment to public education (DuFour, 2008). From the establishment of public education by Thomas Jefferson in the Northwest Ordinance to its current incarnation, public education has been driven by the belief that educated individuals will sustain the individual freedoms provided by a democratic government (Tyack, 2007). However, that enduring commitment to finding common ground has been marked by changing opinions of what students should learn, how their learning can best be measured, and how educators can and should meet the goals of determined outcomes (Eaker & DuFour, 2002) . From the first efforts at school reform through subsequent movements, the determination and institution of reform has been largely external.

A contemporary example of attempts at school reform from outside public school and teacher input is the federal No Child Left Behind Law and the varying responses of distinct school districts to its requirements.

Fullan (1997) found that "Educators have often been led by sources outside of the educational community to dealing with fragmented, unworkable solutions" (p. xii). These external forces which can come from the business sector or from those in the upper socioeconomic class have ignored teachers and principals or oversimplified their actual

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educational practices. A foundation of mistrust of the leadership of teachers in the educational setting has rested in traditional and pervasive public attitudes concerning teacher professionalism. Inseparable from any educational reform attempt is community perception of the role of the teacher in student learning and changes in that perception over time. Historically, the teacher has been seen as an important contributor to a stable community characterized by a general understanding of fundamental reading, writing, and mathematic skill sets (Tyack, 2007). During the early twentieth century, teachers began to assume an increased status. The traditional American education and certification of public school teachers had been achieved by mastery of a required two-year teaching degree at what were designated as Normal Schools. During the 1920s and 1930s post-secondary institutions began incorporating teacher training into the extended four-year Bachelor's Degree programs. The developing perception of the teacher as a professional opened the way to the expanding role of teachers as stakeholders in the educational infrastructures of which they were becoming full participants (Eaker & DuFour, 2002). Increasingly teachers began to engage in ongoing professional development. In many states, including Pennsylvania, attaining and maintaining teacher certification has required continuing professional development. Many teachers have voluntarily pursued Master's Degrees and beyond in order to expand their understanding of student needs and current professional interventions. Teachers have sought to share insights within their individual classrooms and through collegial sharing, formal and informal. By doing this type of activity, teachers are able to learn from their colleagues and build teacher leadership in schools.

The concept of the professional learning community is a natural outgrowth of this changed perception of teachers as professionals and potential leaders. In the professional learning community model solutions are evolving from change mandated entirely from without

the schools to a focus on change from within the educational system itself. Responsibility for examination of student achievement, research into student needs, and determination of best teacher practice in response to student needs becomes the purview of professional educators, involving both administration and professional teaching staff.

Within individual schools and within school districts there are now two challenges. One is the establishment of a working, viable professional learning community. The other issue then becomes the development of an infrastructure that will sustain the established professional learning community (DuFour, 2004). Both of these challenges involve the process of change. Both involve examination of the status quo. Therefore, it is important to understand the nature and process of institutional change and its particular characteristics within an educational setting, such as an individual school or a district system. Generationally, change within an organization falls into a general pattern. The first order of change within an institution consists of the examination of the status quo. Once it has been determined that there is necessity to change that status quo, the second order of change occurs. This involves a commitment to making the changes from the status quo to a new model, in this case the professional learning community.

Changes in roles, responsibilities, and infrastructure are not linear. Individuals may move through the process readily and enthusiastically. Others will respond more slowly. For the latter group of individuals, changes will occur at earlier or later rates of adaptation, depending on individual acceptance of and readiness to engage in the change process. This includes their comfort with the status quo and their acceptance of the need to adapt to a changing order. Most participants involved in a process of institutional change will eventually accept and adapt to the changes. Therefore, changes in an institution and its leadership tend to be fluid. It is the

acceptance in this fluidity of change and acceptance that ultimately will enable the professional learning community to be sustained once it is established (McCombs & Whisler, 1997).

As professional learning communities are implemented within a school or district, organizational evolution reflects changes that are unique to educational institutions, rather than to institutions of a more general nature (Harris, 2003). The organization and the implementation of new types of leadership specifically impact the learning of students within the educational setting. Fulfilling the needs of students in general, is the core mission of public, private, and parochial schools. Professional learning communities enable teachers to exercise increasing contributions to that core mission as changes in infrastructure are initiated and sustained. In the past leadership was primarily hierarchical. Administrators determined almost all aspects of school organization, curriculum, teacher and student expectations, and student achievement. In the past two decades the concept of educational leadership has seen the development of the concept of teacher leadership. Increasingly, teachers have been encouraged to engage in a professional classroom practice. This philosophy has seen a series of changes in the structure of leadership within the setting of an individual school or district. However, the professional learning community model represents a fuller acceptance within the educational institution of changes from the status quo. Hierarchical educational infrastructure changes somewhat fluidly to a more diverse model that includes varying leadership roles for teachers. As these changes occur within an organization, there are identifiable orders of change unique to educational mission and challenges (DuFour, 2004).

The work of Alma Harris (2003) explored the differences between actual change within educational theory, practices, and educational infrastructure versus merely derivative extensions of past theory and structure. In the latter the changes are more directly reliant on mere revisions

of the existing status quo.

Teacher/administrative role changes as demonstrated by the professional learning community are not merely derivative of earlier theoretical foundation in roles. The dichotomy between dependency and empowerment must be recognized and addressed within the educational infrastructure. Within an educational system, whether a school or district, there can be changes in the nature of the organization and the implementation of new types of leadership. The concept of teacher as professional enabled the emerging role of teachers as learners and as teacher-leaders in the larger professional community (DuFour, 2004). As teacher leadership became recognized as vital to student learning, the necessity for change became increasingly apparent in school systems which embraced this concept. Previously outside forces had determined educational policy and the methods of their implementation. Change on a major scale within an educational institution is required in order to establish professional learning communities, but it is important to understand that sustainable change must occur in a slow, organic process in order to succeed. To implement and evaluate the professional learning community model and to sustain it, it is important to examine the issues of dependency and empowerment within an educational setting, whether in a single school or within all the schools of a district. Fullan (1997) defined dependency as "A condition in which an individual's actions are primarily shaped by events and/or actions or directions of others" (p. ix-x). For teachers dependency is often a response to the external bombardment of new tasks and constant interruptions in educational practice.

There can be an assumption by overloaded teachers that the entire educational system must be changed in order to make the changes that will improve student learning (Fullan,1997). However, the slow but steady implementation of teacher empowerment through the professional

learning community model has proven to be a better way for teachers to adapt classroom practice through joint teacher research and subsequent changes in teaching practice (DuFour, 2008). Understanding best teaching practice is fostered by real inquiry by teachers who develop questions based on real classroom experience, who seek answers through joint research, who examine actual examples of student work and student data, and who develop responses to identified student needs (DuFour, 2004). Such empowerment requires an administration to be open to changes within their own roles. Therefore, principals play a major role in both creating a professional learning community and in sustaining it (DuFour, 2008).

In contrast to dependency, Fullan (1997) writes that empowerment is characterized as "Playing a central role in determining what is to be done" (p. 40). Furthermore, Fullan (1997) writes that "Empowerment results in interdependency, rather than dependency" (p.40). Interdependency between administrator and teachers is vital to the workings of a professional learning community. "Indeed, the effective principal and the effective teacher leader must go together" (Fullan, 1997, p.41) Teacher leadership, as well as administrative leadership, is absolutely necessary. A crucial concept of empowerment is the leader as learner. "Only perpetual learners can cope with, make sense of, and indeed help forge meaning out of changing situations" (Fullan, 1997, p. 44). Principals must therefore be willing to modify traditional hierarchal administrative roles. Again, even principals willing to commit to making changes must allow such changes to evolve in response to student needs and teacher readiness to change their own roles within the educational system. An empowered relationship between administrators and teachers is reciprocal. The principal is enabled to learn from teacher ideas and to be responsive to these ideas developed by teacher/learners in the professional community (Eaker & DuFour, 2002).

Although the professional learning community model illustrates some extension of some earlier theory, the philosophy and theory of educational leadership has changed in fundamental ways. Perceptions of educational leadership and its relationship to achievement of the educational mission has been a response to ongoing educational research. Actual perceptions of leadership roles of both administrators and teachers encourage new patterns within infrastructure to evolve. However, not all change affects an infrastructure in a formulaic way. The implementation of change depends on a number of factors in a particular school setting. The evolution of leadership roles within an educational organization falls into two orders of change.

The first order of change consists of examination of the status quo, the original organizational model as it exists and an examination of its efficacy in achieving discrete goals such as student achievement. Research and inquiry are imperative to such analysis and determination what changes must be implemented. If such an examination leads to a recognition that certain changes must be made to better meet the mission and goals, an organization moves through the second order of change. The establishment of professional learning communities affirms the importance of teacher leadership in determining and facilitating student learning through best educational practice. Understanding the professional learning community model and its evolution are important in ensuring that the value of shared administrative and teacher leadership roles can be sustained even as second order of change becomes more established within an organization. Professional learning communities give teachers ownership of their own role in inquiry and implementation of student learning (DuFour, 2008). New challenges to student learning develop over time. The professional learning community role in evaluating student needs and researching and implementing professionally sound strategies is vitally important to meeting new challenges. Once professional learning communities are established,

teachers must sustain professional learning within the educational setting. Understanding the characteristics and workings of the professional learning community model can foster their sustainability.

3.1   PURPOSE OF THIS EXPLORATORY STUDY

External control and resulting institutionalized policy and infrastructure have fostered dependency. Educators must take the initiative to create conditions that foster real change in professional leadership. To do so, teachers must be empowered to lead. They must be willing to lead. Administrators must see themselves as partners in education with professional teacher leaders. The professional learning community explores the possibilities of meeting student needs through research, cooperation, and innovation by a dedicated team of professional educators at all levels.

By conducting this intra-school study of established Professional Learning Communities in a high performing Southwestern Pennsylvania School District, the researcher used an existing research-based survey instrument which helped provide quantitative data with regard to the variation that exists within each Professional Learning Community.

The data the researcher received helped answer following research questions of this study:

1. Based on the *SPSaLC* survey which was developed by Shirley Hord, to what extent does the survey address the constructs (shared and supportive leadership, shared values and vision, collective learning and application, shared personal practice, and supportive conditions) that Hord maintains as being essential in Professional Learning Communities?

2. To what extent does the *SPSaLC* model work at analyzing the internal processes of Professional Learning Communities within one school?

3. Does the *SPSaLC* survey discriminate in measuring the maturity of Professional Learning Communities within one school?

3.2   DEFINITION OF TERMS

Concurrent validity: "The extent to which scores on a test match performance scores on one or more criterion measures obtained at about the same time the test is given" (Wiersma & Jurs, p. 475, 2009).

Construct validity: "The extent to which a test measures one or more dimensions of a theory or trait" (Wiersma & Jurs, p. 475, 2009).

Content validity: "The extent to which the content of test items reflect eh academic discipline, behavior, or whatever is under study" (Wiersma & Jurs, p. 475, 2009)

Contingency tables: "The array into which a set of numeration data may be grouped according to two or more classification variables" (Wiersma & Jurs, p. 475, 2009).

Cronbach's alpha: "An internal consistency or reliability coefficient for a test, based on two or more parts of the test but requiring only one test administration" (Wiersma & Jurs, p. 476, 2009).

Descriptive statistics: "The part of statistical procedures that deals with describing distributions of data and relationships between variables" (Wiersma & Jurs, p. 476, 2009).

Field testing: "The natural situation in which the research is conducted" (Wiersma &

                        Jurs, p. 275, 2009).

Likert scale: "A scaling procedure, commonly associated with attitude

                        measurement which requires a graded response to each item or statement.

                        In scoring, the alternative responses to items are assigned numerical

                        values, and the individual's score is the sum of the numerical values"

                        (Wiersma & Jurs, p. 477, 2009).

Marginal agreement: "The agreement for each stage of the row or column values of a

                        stage divided by the larger of the two values" (Schuh, p. 117,

                         2008).

                         "Comparing total frequencies of categories across a number of events"

                        (Frick and Semmel, p. 164, 1978).

Pilot study: "A study conducted to the major research study that in some way is

                        a small-scale model of the major study; conducted for the purpose of

                        gaining additional information by which the major study can be improved"

                        (Wiersma & Jurs, p. 478, 2009).

Reliability: "A measure of the consistency of a test" (Wiersma & Jurs, p.

                        478, 2009).

Test-retest: "A procedure for determining test reliability by correlating the

scores of two administrations of the same test to the same individuals"

(Wiersma & Jurs, p. 479, 2009).

Validity: "The extent to which a measurement instrument measures what it

is supposed to measure" (Wiersma & Jurs, p. 480, 2009).

4.0 REVIEW OF THE LITERATURE

4.0.1 Rationale and purpose for the development of professional learning communities

Federal and state mandates have changed public education. More specifically, the No Child Left Behind Act of 2002 has changed the curriculum, instruction, and assessment used in school districts across the United States. With the establishment of Professional Learning Communities, the concept of sustainability is inherent in any attempt to change the culture of an education institution and can become a positive change in today's K-12 school setting. As more schools adopt the model of Professional Learning Communities, there is the necessity of understanding the obstacles to sustainability and the need to develop strategies to maintain heretofore what has been sustained.

The purpose for developing Professional Learning Communities is best described by DuFour (2004), who believed "The PLC model flows from the assumption that the core mission of formal education is not simply to ensure that students are taught but to ensure that they learn" (p. 7). In addition, he saw the Professional Learning Community as a way to shift the focus of teaching to a focus on learning. Furthermore, DuFour (2004) saw the purpose of developing a professional learning community so that teachers can address questions such as what they want students to learn, how the student learns and how the members of the professional learning community would respond when a student experienced difficulty in learning.

4.1 THE NEED FOR TEACHER LEADERSHIP

The No Child Left Behind Act of 2002 has dramatically changed how administrators operate today's schools. Because of the No Child Left Behind Act of 2002, there has been a need for school administrators to study, create, and implement Professional Communities. As a result, teacher leadership has grown.

Hord and Sommers (2008) stated that "No Child Left Behind has called attention to instructional assessment, to the provision of high quality professional development, and to other issues" (p. 58). Additionally, Hord and Sommers (2008) wrote that "No Child Left Behind has been compelling to educators forcing them to examine what they do, how they do it, and the effects it has on students" (p. 58). Similarly, Roland Barth (1991) argued "Are teachers and administrators willing to accept the fact they are part of the problem?...God didn't create self-contained classrooms, 50-minute periods and subjects taught in isolation. We did—because we find working alone safer than and preferable to working together" (pp. 126-127). With these issues in mind, one must realize that there is a compelling need for the development of Professional Learning Communities in the public school setting, and that the arguments for them along with the evidence about their many successes clearly demonstrate that once implemented, they must be sustained so that teachers' changing initiatives can be implemented.

Lortie (1975) wrote that "The actual unfolding of any one scenario will require that teachers adapt to their altered circumstances, forge firmer collegial bonds, and improve their technical knowledge" (p. 229). Furthermore, Lortie (1975) wrote that "Teachers seem to want conditions which favor more control over student involvement, more discretion to make decisions, and greater trust from principals and parents" (p. 185).

4.2   PREREQUISITES FOR PROFESSIONAL LEARNING COMMUNITIES

Before creating professional learning communities, there are prerequisites such as goals, focus, expectations, shared beliefs, and personal commitment that must be considered carefully. In terms of goals, Lortie (1975) found that teachers find reaching important and personal goals as being related to pride in the profession. The focus of the professional learning community must be on instruction. Lortie (1975) also found that teachers want others to respect their work and focus their efforts on instruction. McLaughlin and Talbert (2006) found that teacher communities depend on "Joint work on instruction, how well the guidance and design of the joint work is done and that the administrators must be supportive in terms of broad teacher leadership" (p. 39). Roberts and Pruitt (2009) cited the 1998 work of Lambert in which Lambert believed that the entire school community must be focused on learning and leading together. Expectations for professional learning community members according to Lambert include a:

"Responsibility for the performance of peers will probably be readily accepted where teachers work together in highly integrated teams; team members have more at stake in the performance of fellow teachers and have considerable opportunity to observe their work activities" (p. 237).

Other considerations when building and implementing Professional Learning Communities include characteristics such as description and various elements that will exist within the communities. Roberts and Pruitt (2009) cite the work of Roland Barth, who in 1990 defined a learning community as "A place where students and adults alike are engaged as active learners in matters of special importance to them and where everyone is thereby encouraging everyone else's learning" (p. 9).

Hord and Sommers (2008) found that Professional Learning Community members should share common goals and the common mission of a professional learning community. Additionally, they found that "Their energy and enthusiasm contribute to a higher probability that the vision of the school will be realized" (Hord & Sommers, 2008, p. 19). Furthermore, Hord and Sommers (2008) wrote that "Together the staff members engage in powerful learning that adds to their knowledge base and repertoire of technical skills that increases their effectiveness" (p.19). The last prerequisite needed for implementation is a personal commitment from teachers. Roberts and Pruitt (2009) cite the 2001 work of York-Barr who believed that members of learning groups commit themselves and their personal views about instruction and teaching and learning when in groups for the professional learning communities. Roberts and Pruitt (2009) also cite the 2002 work of Carol Rodgers who suggested that groups:

"Choose a type of activity for the group, prepare for group reflection, explain the produced work, examine the work, actively work on what is discussed, evaluate the actual outcome, and build the professional learning community through reflection" (p. 22).

4.3   PROFESSIONAL LEARNING COMMUNITIES CHANGE SCHOOL CULTURE

Creating and sustaining professional learning communities within schools requires administrators to make difficult decisions. Ultimately, these decisions can change the culture within the school. When trying to create professional learning communities within schools, administrators deal with issues such as time, space, teacher unions, facilities and the master schedule (McLaughlin & Talbert 115). Traditionally, teachers only met during faculty meetings.

However, with the need to meet the accountability requirements of state and federal mandates, extra time during the school day is necessary for teachers to meet more often. Teachers and other occupations that focus on public support, writes Lortie (1975), "Must justify that resources are being utilized and that the expectations of the public must be met" (p. 107).

Douglas Reeves (2006) discusses that when it comes to the implementation of collaboration and transparency within learning communities, a wide range of norms becomes commonplace. However, Reeves (2006) does caution that some professional learning community members resist to the point of threatening administrators with grievances and other forms of protest. This resistance, according to Reeves (2006), comes about as a result of analyzing individual classroom data or comparing professional practices among different teachers. To avoid such problems that could include a change of a school's culture, it is recommended that schools where such resistance occurs, need to consider arranging visits to other school districts that have successfully implemented the concept of Professional Learning Communities (Reeves 2006).

An area of cultural change in the professional learning communities is what the mission of the professional learning community is and where emphasis should be placed during the planning stages. Suggested emphasis should be placed on collective learning, reflection, dialogue and inquiry (Hord & Sommers 2008). With these activities in mind, DuFour (2004) believes that a professional learning community member should "Focus on learning rather than teaching, work collaboratively, and hold yourself accountable for results" (p. 6).

The professional learning community culture also can be viewed as "The culture of a community of learners that permits the teachers in a school to view themselves as members of a

team of learners and leaders rather than as participants in the traditional leader-follower roles" (Roberts & Pruitt, 2009, p. 25). Along with the teamwork concept, the school needs to be healthy and characterized with shared values, continuous learning, and collaborative opportunities (Peterson 2002). Furthermore, Pfeffer and Sutton (2006) add that "Having a culture and the capacity to operate effectively is much more important to organizational success than having the right strategy" (p. 145). Roberts and Pruitt (2009) describe learning communities as "Cultural settings in which everyone learns, in which every individual is an integral part and in which every participant is responsible for both the learning and the overall well-being of everyone else" (p. 2). Similarly, "The culture of a community of learners permits the teachers in a school to view themselves as members of a team of learners and leaders rather than as participants in the traditional leader-follower roles" (Roberts & Pruitt, 2009, p. 25). Again, (Marzano, Waters & McNulty 2005) discussed that "An effective culture is the primary tool with which a leader fosters change" (p. 48). Additionally they argued that supporting a teacher's collaborative efforts so that sustainability can be achieved.

The change of a school's culture and thinking must be achieved for professional learning communities to succeed. Roberts and Pruitt (2009) cite the 2002 work of Peterson which discussed that school and their culture can be healthy by characterizing them with shared values, continuous learning, and collaborative opportunities.

Building and implementing professional learning communities within a school requires more than moving teachers to different duties, assignments, assigning teachers to teams and providing extra time to meet; it requires a drastic change in the culture of how the school operates. Fullan (1997) discusses the work of Pfeffer and Sutton which showed that "Having a

culture and the capacity to operate effectively is much more important to organizational success than having the right strategy" (p. 89).

McLaughlin and Talbert (2006) cite the work of Fred Newman and associates in 1996 that concluded that a school's culture determined the effects of structural change on instructional practices, rather than the reverse. Additionally, Fullan (1997) discussed that "Reculturing is the way that the culture is change" (p. 43). Furthermore, Fullan (1997) maintained that a reculturing is "One that activates and deepens moral purpose through collaborative work cultures that respect differences and constantly build and test knowledge against measurable results—a culture within which one realizes that sometimes being off balance is a learning moment" (p. 43).

4.4 EFFECTIVE LEADERSHIP NEEDED TO IMPLEMENT AND SUSTAIN PROFESSIONAL LEARNING COMMUNITIES

After the planning and implementation of a building's professional learning communities has taken place, the leadership of the communities must take top priority so that sustainability can be achieved. Reeves (2006) directly quotes the research summary of David Surowiecki's *The Wisdom of Crowds* (2004) which states that "Leadership decision making is more accurate and less risky when entrusted to a diverse group that to a single individual, even when that individual has significant expertise" (p. 25). Fullan (1997), on the other hand, believes that "The leadership of professional learning communities must have an explicit sense of purpose, use strategies that mobilize many people to tackle tough problems, be held accountable by measured and debatable indicators of success, and be ultimately assessed by the extent to which it awakens people's

intrinsic commitment, which is none other than the mobilizing of everyone's sense of moral purpose (pp. 20-21). Sergiovanni (1996), however, reached the conclusion that professional learning communities must be aimed at becoming "learner-centered communities" (p. 138). The work of Sergiovanni (1996) in the state of Texas brought about a set of proficiencies for teachers at developing communities that are "reflective, developmental, diverse, conversational, caring, and responsible" (p. 138).

Various leadership expectations are central when trying to sustain professional learning communities. Hord and Sommers (2008) believed that leadership implications aimed at sustainability include "Ask why before how; learn and teach others; have a head learner; actions count more than plans; be kind to yourself; reduce fear; beware of the prophet who carries one book; beware of false analogies; measure what matters; and, remember they are watching" (pp. 89-90).

The dynamics of the relationships of the professional learning community members was discussed in the work of Sergiovanni (1996) who cited the 1967 work of Robert J. Schaefer who saw the school as "A center of inquiry and viewed teachers as school researchers and practitioners who become students of their own teaching practices" (p. 151). Along with the work of Robert J. Schaefer, Kouzes and Posner (1998) state that leaders must "Set clear standards, expect the best, pay attention, personalize recognition, tell the story, celebrate together, and set the example" (p. 18).

Building the relationships of the members of the professional learning communities is essential for sustainability. Hord and Sommers (2008) identified six areas that deal with collegial learning and collaborative work. Those areas include the following:

"Identifying an area or issue that requires staff's change of knowledge and skills; deciding what to learn to gain new knowledge; engaging in the learning; applying the learning appropriately in classrooms; applying the learning appropriately in classrooms; debriefing with colleagues; revising, based on the new learning experience" (pp. 144-145).

Once professional learning communities are formed, the concept of teaming is evident and can affect the functioning of professional learning communities. Before teaming can be implemented in the professional learning communities, several considerations must be taken into consideration. Lortie (1975) stated that teachers "Prefer classroom tasks over organizational tasks and classroom claims over organizational initiations" (164). Lortie (1975) also wrote that teachers in his research would rather focus on classroom matters and tended to find other tasks as being secondary.

Overall, before one can think about the sustainability of professional learning communities, he or she must recognize that there are characteristics that apply to the culture of teachers in general. Lortie discussed the 1966 work of Hermanowicz that found the instruction involved in teaching to be described as too theoretical and that intellectual content was thin. Additionally, Hermanowicz's work cited that teachers felt that courses were too repetitive and boring. Also, the work of Lortie (1975) found that the amount of time in personal exchange between teachers was limited because of the organization of the school day and that most colleagues did not spend time with colleagues and engage in discussion. Furthermore, Lortie cited the 1969 work of Edgar and Warren that found that teachers "Tend to move towards the values of their supervisors who conduct evaluations" (p. 73).

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With regard to teaming, Fullan (1997) stated that "Successful organizations don't go with only like-minded innovators; they deliberately build in differences" (p. 43). Lortie (1975) noted that the experience of teachers tends to be private and is typically not shared. In terms of reluctance in teachers, Lortie (1975) noted that "Teachers are like practitioners in many fields— they are reluctant to try new approaches unless they feel sure they can make them work and avoid damaging their reputations" (234). Furthermore, Lortie (1975) added that "Teachers have a built-in resistance to change because they believe their work environment has never permitted them to show what they can really do" (235). Teachers also "Prefer classroom tasks over organizational tasks and classroom claims over organizational initiations" (Lortie, 1975, p. 164). In addition Lortie (1975) found that teachers would rather focus on classroom matters and find other things as being secondary. Overall, the areas, or themes, Lortie (1975) attributes to attracting teachers to teaching include "The interpersonal theme, the service theme, the continuation theme, material benefits theme, and the theme of compatibility" (p. 27).

Planning time for professional learning communities is essential to the sustainability and attainment of their success. Hord and Sommers (2008) suggest giving faculty members time to meet at least twice a month and that the entire faculty must meet at least once per month. Furthermore, Hord and Sommers (2008) recommend advanced planning, supportive conditions from administrators and that all professional learning community members be made fully aware what will take place during each of the scheduled meetings. Not only is advanced planning essential, but structural considerations must also be taken into consideration. Hord and Sommers (2008) recommend that a common meeting place be prearranged and that coverage for staff be planned in advance.

4.5   AN INTENSIVE APPROACH TO THE SUSTAINABILITY OF PROFESSIONAL

LEARNING COMMUNITIES

DuFour (2004) on the other hand suggests a more intensive approach for sustainability. DuFour (2004) suggested that teachers work collaboratively in teams for a total of ninety minutes on a daily basis so that teachers can administer common cumulative exams that give students the necessary preparation for state proficiency tests. Work such as this is necessary where "Peers influence other colleagues and discuss practice rather than concepts" (Lortie, 1975, p. 75). "These challenges, according to Lortie, (1975), "are fraught with complications" (p. 75). Furthermore Lortie (1975) found that teachers need standards for teaching and that informal exchanges between peers is sought above formal administrative supervision.   Nevertheless, Lortie (1975) found that gaps in "Interpersonal support is matched by weaknesses in the subculture of classroom teachers" (p.73).   Additionally, he found that "There are indications that peers influence newcomers and that there is little to suggest that this amounts to a significant sharing of common understanding and techniques" (Lortie, 1975, p. 73).   Meanwhile, in contemporary research, Terry Wilhelm (2006) stated that one option is "To continue doing things the way we have. The other option is to make temporary and difficult fiscal decisions so that a successful program can be implemented with additional staffing, if necessary" (p. 26).   Most importantly, the common components necessary for sustaining the work of a professional learning community, according to Hord and Sommers (2008) include having "shared beliefs, values and vision; shared and supportive leadership; collective learning and its application; supportive conditions; and, shared personal practice" (p. 9).   Perkins (1995) found that "thinking strategies, positive attitudes in good thinking and metacognition—awareness and management of one's own mind: is necessary for success in professional learning communities (p. 234).

4.6 THE NEED FOR EFFECTIVE TEACHER LEADERS AS FACILITATORS

Professional learning communities must be facilitated properly to ensure sustainability. Education has been described as a people business, a business about the diversity of people (Guild & Garger, 1985). Fullan (2008) believed that professional learning communities can face problems simply because they can sometimes focus on the individual leaders of the learning community. DuFour (2004) in fact, writes that "In order for teams to be successful, team members must deal with roles and responsibilities, protocols regarding their roles, relationships among members and focus on adopting a mindset that student achievement goals need to be tied to the district's goals" (p. 10). McLaughlin and Talbert (2006) however, stated that "A skilled leader or facilitator is needed to get teachers collaborating in order to improve student work and that department leaders must be used to assess learning outcomes, work on interventions, and keep all teachers within the department on task" (p. 41). Furthermore, McLaughlin and Talbert (2006) believe that high school department chairpersons, district coordinators, or consultants could be facilitators for professional learning communities. According to Roberts and Pruitt (2009), facilitators must be leaders of learning whereby the Professional Learning Communities change the relationship among staff members simply because everyone in the Professional Learning Communities faces the mandates of the No Child Left Behind Act of 2002. In order to be effective, Hord and Sommers (2008) suggest starting each meeting with a quote so that professional learning community meetings show a purpose.

In terms of facilitating professional learning community meetings, Roberts and Pruitt (2009) actually quote Spillane (2008) who believed that leadership in professional learning communities needs to be centered on leaders who are formal and informal. This type of

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leadership is described as distributed leadership. Robert and Pruitt (2009) discussed Spillane's view of distributed leadership as:

> "A distributed perspective frames leadership in a particular way; leadership practice is viewed as the product of the interactions of school leaders, followers, and their situation rather than viewing leadership practice as a product of a leader's knowledge and skill, the distributed perspective defines it as the interactions between people and their situations" (p. 37).

Also with facilitating professional learning community meetings, Roberts and Pruitt (2009) offer facilitative leadership from the 1994 work of Conley and Goldman. Facilitative leadership is described as a type of leadership in which principals do not dominate professional learning community meetings. In addition, facilitative leadership according to Conley and Goldman (1994) is described as "The behaviors that enhance the collective ability of a school to adapt, solve problems, and improve performance" (p. 238). Tuckerman (1965) found that groups evolve toward productive teams who collaborate.

Even though the facilitation of the activities that take place in professional learning communities is important, collaboration must also take a top priority. Fullan (2008) writes that "Our own strategies endorses and facilitate intra-school collaboration, in which teachers learn from each other—what some researchers call professional learning communities—but now we have initiatives in which schools learn from each other " (p. 47). The work of McLaughlin and Talbert has shown that professional learning communities based in schools are a great source for learning. McLaughlin and Talbert (2006) write that "Professional learning communities require professionals to take responsibility for the own learning and the learning of their students and

that teachers are able to raise the standards in their classrooms as the standards in professional learning communities are raised" (p. 113). With regard to collaboration in professional learning communities, DuFour (2004) has written about collaboration in which educators must deal with the concept of reflection; otherwise, the meaning of the professional learning community is lost.

4.7　COLLABORATION AND TEACHER LEARNING AS PROFESSIONAL STAFF DEVELOPMENT

Along the same lines of collaboration, professional learning communities for teachers must focus on continuous learning. Wilhelm (2006) cited Fullan in that "You cannot have students as continuous learners and effective collaborators, without teachers having the same characteristics" (p. 28). Additionally, in direct relation to teacher collaboration, Lortie (1975), wrote that inquiry based intervention is necessary for teachers. Continuous learning can best be described in the work of Linda Lambert who, in *Building Capacity in Schools*, describes the leadership function of professional learning communities as "embedded in the school as a whole" (Lambert, 1998, p. 5). As the learning processes in schools and professional learning communities continually change, collaboration in the learning process which includes dialogue, action, reflection, and inquiry must also change. Fullan (1997) cites the 2000 work of Dixon who believed in the myth that:

> "The exchange of knowledge happens only in organizations that have a noncompetitive or a collaborative culture. It follows that the first thing you have to do is fix the culture and then get people to share. But I have found that it's the other way around. If people

begin sharing ideas about issues they see as really important, the sharing itself creates a learning culture" (p. 84).

For collaboration and continuous learning to function towards the goal of sustainability, activities aimed at improving instruction, teacher learning and student learning are all essential. As Roberts and Pruitt (2009) cautioned, "Fewer learning activities for these professional learning communities can reduce the capability of schools to become professional learning communities" (p.3). Hord and Sommers (2008), however, recommended that resources for meetings to be effective be required. They suggest that professional learning communities have data available in the meetings for the teachers to discuss. This data would include state proficiency exam scores, formative assessment data, disciplinary reports, and other archival data. Moreover, Hord and Sommers (2008) highly recommend that a predetermined agenda be made before each meeting so that all professional learning community members can see what is going to be discussed and what the overall objective of the meeting is going to be. With this in mind, a predetermined agenda aims to improve staff development in the professional learning community environment.

Sergiovanni (1996) cited the work of Lieberman and Miller who suggested the following ways to improve staff development. The ways that Sergiovanni cited include the following:

"Working with people rather than working on people; recognizing the complexity and craft nature of the teacher's work; providing time to learn; building collaboration and cooperation; starting where people are; understanding that knowledge is a way of helping people grow; share leadership functions as a team; and, organize meetings with a focus" (pp. 148-149).

Activities aimed at improving instruction and improving sustainability can be found in the work of Terry Wilhelm (2006) who cited research by the Noyce Foundation in 2008. The research found that if schools offered a pre-teach period before a core period, students would be ensured they had the same teacher for the core lesson which was aimed at improving student achievement. With regard to professional learning communities, Wilhelm (2006) stated that "The master schedule needs to be reworked so that a pre-teach period can be offered to students before their core period" (p.24). With this in mind, the aim is to help students who fall behind in achievement and is designed to provide extra support for students in areas such as English and math. By making major scheduling changes such as these, schools undergo a major paradigm shift. As Roberts and Pruitt (2009) maintain that "Building learning communities requires a shift from the paradigm of schools as bureaucracies to a vision of schools as communities" (p. 25).

An agenda detailing what is to be accomplished at each professional learning community meeting is essential to sustainability. Teachers need to be aware of what materials they need to bring with them so that meetings can have meaning. Unfortunately, however, human resources are needed to cover the individuals who are expected to be in the professional learning community meetings. In order to have communities of continuous inquiry and improvement, Hord and Sommers (2008) cited the Southwest Educational Development Laboratory of March 1999. The Southwest Educational Development Laboratory suggested the following:

"Hire or reallocate staff so that there are subs available for staff study, work, and planning during the day; use clinical or intern and resident students from universities to cover classes; use parent/community volunteers to allow staff to study or receive training; implement an activity day when students are engaged in multiple enrichment activities led by volunteer experts while staff meets; multiage student grouping with students

working on projects with trained substitutes or monitors; hire one or more permanent substitutes; use retirees to cover classes; use trained parent, family, or community volunteers; nonteaching positions cover classes; substitutes to cover classes; pay substitutes to teach; partner teaching where two people share one position can substitute for each other; required time in each school for collaboration where substitutes float around the district; groups of students in a grade level together for a common activity; use an aide with parent volunteers to work with students; teachers for that grade level meet together; recruit volunteers to manage large group activities with one certified staff to free up other teachers for time to meet and study, and teachers covering for other teachers" (pp. 62-63).

Lortie (1975) best describes the aforementioned conditions suggested by the Southwest Educational Development Laboratory. He wrote that:

"Supportive school systems might be prepared to reorganize reward systems so that collegial contributions would be encouraged. Sponsors of such program could help to link them for mutual support and stimulation and arrange for publication and dissemination of the results. Demonstration projects could offset the seeming utopianism of proposing that teachers could engage in direct efforts to improve the technical knowledge of the occupation" (p. 242).

Meanwhile, Roland Barth (2006) suggested that sustainability is possible if teachers (a) talk with one another about their practice; (b) share their craft knowledge; (c) observe one another while they are engaged in their practice; (d) and, root for one another's success (p. 11). Similarly, McLaughlin and Talbert (2006) believe that a teacher's practice in a professional

learning community comes about by talking solely about instruction. This usually begins with some type of focus on instruction, content, students, or various assessments.

To continue the dialogue and collaboration on instruction, Terry Wilhelm (2006) encourages RTI—Response to Intervention used by the professional learning communities so that students do not fall through cracks. Wilhelm (2009) states that "Teachers have not done much with differentiation in instruction and that "formal training and follow-up coaching" have not been implemented" (p. 32). Lastly, Wilhelm believes that universal access to curriculum should be for all students. DuFour (2004) on the other hand believes that the staff must design additional time and support for struggling students that must be done timely, based in intervention rather than remediation, and be directive. In addition, DuFour (2004) believes that the staff of the professional learning communities must require students in need to attend tutoring sessions during their study hall periods. Vodicka and Gonzales (2007) believe that collaboration can be improved. Their work in California focuses on using free websites to encourage collaboration between teachers. Vodicka and Gonzales (2007) suggest that teachers use the California Learning Resource Network, the Technology Information Center, the California Department of Education Website for data and statistics and the Microsoft Innovative Teachers website.

4.8 STRONG COLLEGIAL WORKING RELATIONSHIPS COUPLED WITH COLLABOARATION

In order to use collaboration to sustain professional learning communities, collegial relationships must also be a major focus. Lortie (1975) suggested that teachers should find ways to deal with pedagogical matters. Hord and Sommers (2008) recommend that high expectations be required

when dealing with collegial relationships. Hord and Sommers (2008) stated that "When there is a clear focus and a definite plan to reach quality implementation that the staff will adopt together, expectations are apparent to all and that teachers are encouraged to engage in discussion" (p. 50). Wignall (1992) suggested that in professional learning communities, members encourage debate, discussion, be open with each other and share their opinions. Roberts and Pruitt (2009) however, encouraged teachers to "work together to achieve district and school standards, participate as teams, show sensitivity towards others and their team members, not be afraid to try new teaching strategies and be honest in all dialogue" (p. 52). Also, Roberts and Pruitt encourage that individual conferences between teachers and administrators regarding collaboration take place at the beginning and the end of the year. Peter Senge (1990), however, described that organizations need five disciplines if they are to survive. Senge's work, which not only deals with corporations, can also deal with professional learning communities. They include personal mastery, mental models, team learning, building shared vision, and systems thinking. Lortie, on the other hand, stated that "Collegiality may be induced through informal relationships brought about by tough faculty demands" (p. 236). DuFour (2004), believed that collaboration in team meetings requires going over goals, concerns, results, materials, and pacing. (Byrk & Schneider 2002) believe that "As a social resource for school improvement, relational trust facilitates the development of beliefs, values, organizational routines, and individual behaviors that instrumentally affect students' engagement and learning" (p. 115).

For collaboration to ensure sustainability in professional learning communities, relational factors must be present. Hord and Sommers (2008) believed that in professional learning communities people must be brought together who have trouble trusting others and that principals must work to bring people together into nurturing environments. In fact, Hord and

Sommers (2008) insisted that communication, collaboration, coaching, change, conflict creativity, and courage all be present for professional learning communities to succeed.

One requirement that is essential in professional learning communities to ensure sustainability is for teachers and administrators to have data. DuFour (2004) wrote that "Schools are typically data rich and information poor" (p. 10). Vodicka and Gonzales (2007) believed that data must be used and discussed in order to build trust. Additionally they believed that quarterly assessments can be part of building trust and help alleviate the fear that teachers have when discussing data. Also, Vodicka and Gonzales (2007) believed that discussion of data can take place at grade level meetings where quarterly assessments are discussed. Furthermore, they stated that "Key components compromising the trusting relationship between teachers and principals are consistency, compassion and competence" (p. 19). Lastly, Vodicka and Gonzales state that "The use of data in traditional settings can only occur in a high trust environment" (p. 19).

For successful professional learning communities to be sustained, students must benefit from the work done in the meetings. Roberts and Pruitt (2009) saw students as the beneficiaries of improved instructional practices that result from teachers discussing practices in professional learning community meetings. Lortie (1975) wrote that "Displays of teacher's achievement give visibility to the teacher and that a feeling of success can be felt" (p. 126). DuFour (2008), on the other hand, write that "There is a constant stress for teachers to work in teams and focus on team learning that hopefully leads to high learning achievement for students" (p. 9).

Administrators and teacher facilitators should be with teachers when assessing the progress of professional learning communities. Hord and Hirsh (2009) believe that in order for

the assessment of the professional learning communities to be effective, teachers need to know they can succeed together, collaborative study is needed, colleagues need to be viewed equally and that extended periods of time are needed to meet. Additionally, Hord and Hirsh (2009) identify keys to success such as letting teachers know they can succeed together, expecting teachers to keep their knowledge fresh, give professional learning communities self-governance, make data accessible, teach decision-making skills, show teachers various research, and take time to build trust. For all of this to happen, Fullan cites *The Soul at Work* by Lewin and Regine (2000) who state that:

> "Genuine relationships are built on authenticity and care." In addition, they state that "When the individual soul is connected to the organization, people become connected to something deeper—the desire to contribute to a larger purpose, to feel they are part of a greater whole, a web of connection" (p. 27).

When assessing the progress of professional learning communities, Hord and Sommers (2008) recommend that there be the following:

> "(a) assessment to understand how well the professional learning community is working; (b) assessment to ascertain how well professional learning community members are transferring their learning in the professional learning community in terms of curriculum, instruction, assessment and into their work environment such as classrooms; (c) and, assessment to determine the impact on student achievement as a result of the work done in a professional learning community" (p. 115).

By assessing professional learning communities and their progress, there is the ability to monitor the student outcomes through formal student assessments and informal student monitoring.

The sustainability of professional learning communities is indeed important. Senge (1999) wrote that:

"Sustaining any profound change process requires a fundamental shift in thinking. We need to understand the nature of growth processes and how to catalyze them. But we also need to understand the forces and challenges that impede progress, and to develop workable strategies for dealing with these challenges" (p. 10.)

Peterson, McCarthey, and Elmore (1996) found that when school teachers work in teams, success is experienced in a school trying to restructure. Hall and Hord (1997) found that individuals change, not organizations. The rewards of participating in a professional learning community and celebrating the success of the achievements in a professional learning community are important. Lortie (1975) believed that there are rewards in teaching such as extrinsic rewards, ancillary rewards and intrinsic rewards. McLaughlin and Talbert (2006) write that "School districts need leaders who can help the professional learning community members celebrate their successes. District leadership is needed for reform and to link teacher learning to student learning" (p. 117).

Finally, the No Child Left Behind Act has changed the way that teachers and administrators need to act in response to student achievement. As Senge (1999) wrote, "Supporting and sustaining change in an organization requires a real sense of inquiry. It requires seeing how significant change invariable starts locally, and how it grows. And it recognizes the

diverse array of people who play key roles in sustaining change" (p. 10). One successful way for schools to focus on teaching, learning, student achievement and sharing common practices is if administrators form professional learning communities. When building these professional learning communities, principals are enabling teachers to build collegial trust, build in transparency with student achievement results, share common practices, and change the dynamics of staff development through an efficient use of time.

5.0   METHODOLOGY

5.0.1 Context and background of the school and district as opposed to another regional rival

Today's school administrators are responsible for making important decisions about the curriculum in their respective schools as it relates to state accountability requirements of the No Child Left Behind Act. The purpose of this study was to explore the extent to which the use of Professional Learning Communities benefits the staff of a high performing Southwestern Pennsylvania Middle School.

For the study, I chose a high-performing Southwestern Pennsylvania middle school because of its availability and because I felt that the teachers would be more likely to complete a short survey. The middle school used in the study is from a high performing school district itself. By using the *Pittsburgh Business Times*, *Proximity One Demographics,* and *Standard and Poor's* online information from the past three years, I was able to gather and am able to provide general information about why the district and the middle school are high performing while maintaining the confidentiality of the middle school and its district.

The Professional Learning Communities I studied are from a high-performing school district and are noted in tables 1 and 2 below as "district studied." Also in the tables, I have included a comparable high-performing school district which is larger, wealthier, and a major rival of the smaller district I studied. To maintain confidentiality, I have included general

information about each district, and I used sources such as the Pennsylvania Department of Education, *The Pittsburgh Business Times,* and *Newsweek.* Table 1 illustrates the various aspects of both districts and the elements that contribute to their status as "high performing."

Table 1:   Two High-Performing and Comparable School Districts

Characteristics	District Studied	Comparable District
Most recent budget	$59 million	$126 million
Millage rate	23	20.92
Enrollment	4,000 students	8,000 students
Residents	19,000	45,000
Area	9 square miles	46 square miles
Teachers	300	602
Teachers with advanced degrees	74 percent	66 percent

In Table 2, however, the outcomes and student achievement produced by the two school districts are presented.

Table 2:   Student and School District Performance

Characteristic	District Studied	Comparable District
Ranking in Southwestern PA	Ranking is in top ten	Ranking is in top ten and is two below the studied district
Ranking in Pennsylvania	Ranks in top ten	Ranks in top ten and is five below the school district studied
High School Ranking Pennsylvania	Ranks in the top three	Ranks one below the studied district
Graduation Rate	Over 95 %	Over 95%
National Merit Finalists	At least 10 students	At least 20 students
PSSA Math 7	98% proficient and above	94% proficient and above
PSSA Reading 7	96% proficient and above	95% proficient and above
PSSA Math 8	99% proficient and above	95% proficient and above
PSSA Reading 8	99% proficient and above	98% proficient and above
Average Yearly Progress	All schools in district met AYP	3 schools in district did not make AYP and received warnings

Note: AYP= Average Yearly Progress

In this exploratory intra-school study, I used the School Professional Staff as a Learning Community (*SPSaLC)* survey (see Appendix A) that has been widely used throughout the United

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States and has reported promising psychometrics. Furthermore, I sought permission to use the survey (see Appendix B) and was provided with a licensing agreement. In addition, I spoke to the school district superintendent before contacting the principal.

Because of the extensive research and use of the *SPSaLC* survey instrument, the school superintendent reviewed the survey instrument and discussed my research study with the middle school principal. After this had taken place, I contacted the middle school principal and discussed the purpose of the study with regard to the Professional Learning Communities in his building. I further explained that I conducted pilot test of the survey with five colleagues and that the survey took seven to ten minutes to complete and that I found it beneficial to use an existing measure developed specifically to measure the five domains (shared and supportive leadership, shared values and vision, collective learning and application, shared personal practice, and supportive conditions) of Professional Learning Communities.

My discussion with the principal focused on the purpose of the study which was to determine the variation in each of the Professional Learning Communities based on observer agreement of the *SPSaLC* survey instrument (see Appendix A). In addition, I clearly stated that confidentiality of the school and district would be maintained and that participation from the teachers would be voluntary. Finally, I agreed to provide the results of the study with the principal and superintendent after the data were analyzed and presented for the dissertation defense.

After reviewing the survey, the middle school principal agreed to permit me to conduct the mail survey with the members of the Professional Learning Communities. The principal wrote a letter of consent for me to conduct the study, and I provided the letter to University of Pittsburgh's Institutional Review Board.

The middle school used in the study is a high performing middle school in addition to the district as a whole. The superintendent and middle school principal granted me permission to survey the three grade seven and three grade eight Professional Learning Communities.

Although the reliability and validity have varied in other studies that have used this survey instrument to compare various schools to other schools, this exploratory intra-school study focused on one high performing middle school and six of its Professional Learning Communities with a total of 24 teachers. Because the sample size could be less than 24, the researcher decided to calculate the observer agreement through the use of marginal agreement, a less stringent method for calculating the variance in each group (Schuh, 2008).

The *SPSaLC* survey instrument has historically undergone extensive pilot and field testing in addition to testing its validity and reliability. Because the survey instrument has been reported to be a good measure, the researcher was able gather data that measured the variation in the three Grade 7 Professional Learning Communities and three Grade 8 Professional Learning Communities from the middle school. The results from the surveys were placed in contingency tables which were used by the researcher to calculate the percent agreement based on the figures that appear in the margins of the tables.

5.0.2 Background and development of the school professional staff as a learning community survey instrument

Shirley Hord, a well-known educational researcher and author in the area of Professional Learning Communities, developed a survey instrument referred to as the School Professional Staff as a Learning Community (*SPSaLC*) in 1996. The survey instrument has been reported to

be valid and reliable. The survey instrument continues to be used throughout the United States as a way for schools to gain data regarding their use of Professional Learning Communities.

When applying to the Southwest Educational Development Laboratory (SEDL) for written permission to use the *SPSaLC,* the researcher spoke to Ms. Nancy Reynolds who authorized the use of the survey instrument. Furthermore, the researcher asked Ms. Reynolds for any additional information that she could provide with respect to whether the survey instrument was ever used on an intra-school level. Ms. Reynolds did not have any information regarding any type of research study in which the survey instrument was utilized.

With the very general information provided from SEDL, the researcher learned that the *SPSaLC* survey was field tested in various school districts in the states of Kentucky, Tennessee, Virginia, and West Virginia. In 1996, a pilot test of the *SPSaLC* was conducted by the Appalachia Educational Laboratory (AEL) to a sample group of parents, educators who were participating in an AEL summer experience and a total of 28 students. It was determined that the sample was representative of a typical school community and positive results from the pilot test suggested the applicability of the survey instrument to other participants in other school communities (Hord et al. 1999).

Once the pilot test was conducted, the instrument started to be used in various school districts which are located in Kentucky, Tennessee, Virginia, and West Virginia. In this round of testing, a total of 690 teachers participated (Meehan et al., 1997). In the study itself, the sample included nine high schools, six middle schools, and six elementary schools. Furthermore, four large high schools which were part of the sample agreed to be part of determining validity and reliability at the same time for the study. The descriptive statistics for the instrument suggested

that the instrument differentiated various school faculties based on their maturity as Professional Learning Communities (Meehan et al., 1997).

When Shirley Hord's survey was first used in the various pilot studies, reliability and internal consistency were assessed by using Cronbach's alpha which is "An internal consistency or reliability coefficient for a test, based on two or more parts of the test but requiring only one test administration" (Wiersma & Jurs, p. 475, 2009). In the pilot study, Cronbach's alpha was +0.92 and the alphas were +0.75 or higher are statistically believed to demonstrate a level of internal consistency. For this study, the researchers used the test-retest method whereby the survey is given to the same individuals at one time and is then given to the same individuals at another time to see if the results are the same. This method is used to determine the reliability and consistency of the survey instrument over time. The test-retest stability of the research instrument in this pilot study was +0.94 for fifteen participants who were able to be matched up from the first administration of the survey instrument to the second administration of the survey instrument.

In the actual large-scale field test of this survey instrument, 690 teachers were used as a sample. In the field test of the 690 teachers, the Cronbach's alpha was computed at +0.94 (Hord et al., 1999). Additionally, Cronbach's alphas were calculated for each of the 21 schools in the study to determine the reliability of the instrument. The alphas ranged from +0.62 to +0.95. The researchers did not find any significant difference in the Cronbach's alphas based on whether the school was an elementary school, a middle school, or a high school.

Four large high schools were used in the test-retest reliability on the survey instrument. The number of useable cases was low in which the test-retest coefficient was +0.6147 which was barely satisfactory but could change if the sample size changed (Hord et al., 1999).

In order to gain usable results, validity measures were calculated. When this survey instrument was tested during the pilot phase, scores on the instrument were compared to scores of a second instrument that seemed to assess similar characteristics. For the sample of 690 teachers, all that was mentioned is that the teachers who took the surveys came from 21 different schools at all levels from elementary to high school. The correlation coefficient of +0.82 indicated that validity was exhibited and acceptable.

Next, further development of the instrument was done through field work (Hord et al.,1999), which assessed the validity of the content within the survey. First, Shirley Hord's thorough review of the literature that was available at the time and her quantitative research were conducted in schools located in the southwest area of the United States. All of this was combined with the field test development of the survey instrument which gave way to the development of the *SPSaLC* questionnaire. Shirley Hord then had three researchers from the Appalachia Education Laboratory conduct a second test to determine the validity of the content.

The researchers then reviewed the five dimensions of the survey instrument which include shared and supportive leadership, shared values and vision, collective learning and application, shared personal practice, and supportive conditions. The modifications they made were then returned to Shirley Hord for review. She determined that the modifications were not needed to change the original intent of the survey instrument. In fact, Hord concluded that the

three stages of validating the content of the survey were what she needed to conclude that appropriate content validity was displayed in the survey instrument (Hord et al. 1999).

Finally, in another attempt to test for validity, four high school faculties from the sample completed a school climate survey, which was reported to assess the same construct of Hord's survey instrument. The correlation between the *SPSaLC* instrument and the school climate survey was +0.7489; this result was determined to be statistically significant at the 0.001 level (Hord et al., 1999).

Validating the constructs was done by using the known-group and factor analysis. In New Orleans, there was one high school which was known to be a high functioning Professional Learning Community. There was no mention of any differences in any of the other 21 participating schools from the Appalachia Education Laboratory. In order to explore differences, a t-test was utilized. The t-test measure was used to determine if any differences in the scores between the known group and the participants in the field test were significantly different at the 0.0001 level. By using this measure, it was determined by the authors that the 17 items represented a single construct, the Professional Learning Community (Hord et al., 1999).

5.1   RESEARCH QUESTIONS

The three research questions of this intra-school study were based on the fact that no research study at the intra-school level exists. Only inter-school studies have been conducted. Due to the lack of an intra-school study being conducted, the researcher used the method of marginal agreement (Frick and Semmel, 1978), which made it possible to conduct the study with 23 Professional Learning Community members who volunteered on an anonymous basis. Marginal

agreement was used as the measure where I would determine overall observer agreement by "Comparing total frequencies of categories across a number of events" (Frick and Semmel, p. 164, 1978).

The research questions answered in this intra-school study included the following:

1. Based on the *SPSaLC* survey which was developed by Shirley Hord, to what extent does the survey address the constructs (shared and supportive leadership, shared values and vision, collective learning and application, shared personal practice, and supportive conditions) that Hord maintains as being essential in Professional Learning Communities?

2. To what extent does the *SPSaLC* model work at analyzing the internal processes of Professional Learning Communities within one school?

3. Does the *SPSaLC* survey discriminate in measuring the maturity of Professional Learning Communities within one school?

5.1.1 Data sources

The researcher collected data that were used to measure the variation in each of the three Grade 7 Professional Learning Communities and in each of the three Grade 8 Professional Learning Communities. Each Professional Learning Community has four members which include teachers from the following content areas: English, social studies, math, and science. In total, the sample size consisted of 24 possible participants. Of the possible 24 participants, 23 returned

their surveys. For each Professional Learning Community, one of the teachers facilitates each meeting.

5.1.2   Data collection and use

Before providing all of the materials necessary to administer the survey, the principal and I agreed that it would be best to provide clearly written instructions to the Professional Learning Community members. In addition, all materials were mailed to the principal in sealed large clasp envelopes which were distributed to the facilitators of the Professional Learning Communities. The materials included written instructions, the actual survey, a self-addressed stamped envelope, and a "Thank You" letter in a sealed envelope with a small monetary gift for each teacher. Additionally, the researcher provided his cellular telephone number and University of Pittsburgh email address so that he could provide each participant with contact information should they have any questions.

Furthermore, the researcher placed the large clasp sealed envelope inside a larger clasp envelope that was also sealed. On the outside of those six envelopes, the researcher wrote "Grade 7" on three and "Grade 8" on the remaining three.

By taking this step, the principal and researcher discussed that it would give each Professional Learning Community member the opportunity to complete his or her survey without being "put on the spot." In addition, it was more efficient to provide a self-addressed stamped envelope so that the surveys could be returned to the researcher as promptly as possible.

By participating in this opportunity, the respondents were able to answer the questions anonymously in one session which provided quick feedback.   Because the data is quantitative in nature, it provides provide clear feedback. Creswell (2002) believed that survey research can offer data from a specific population where the researcher can administer a survey in order to gain data such as the attitudes, opinions, behaviors, or characteristics of the populations.

5.1.3 Data analysis

The survey instrument uses a Likert Scale with 5 being the highest and 1 being the lowest in degree of development each category. The numerical selection for each question provided the researcher the necessary data needed in order to calculate the variation in each of the three Grade 7 Professional Learning Communities and each of the three Grade 8 Professional Learning Communities. Observer agreement was used in this study as the measure of reliability among each four-member Professional Learning Community whereby the researcher's objective was to see how consistent each response was among the members of each Professional Learning Community (Schuh, 2008). These figures were expressed in percentage(s) of agreement which ultimately determines how much consistency exists in the teams. As Schuh (2008) writes "A simple percentage agreement is used because the data do not yet support more stringent treatment" (p. 116).

The responses gathered from the survey provided the researcher with quantitative data to explore the extent that Professional Learning Communities are beneficial to the school overall and the variation within each Professional Learning Community. The survey contains a five category Likert Scale for the five domains of the 17 questions that pertain to Professional Learning Communities. The results of the survey provided statistical information to demonstrate

areas of strength and areas where improvement is needed. In fact, Wiersma and Jurs (2009) believed that school systems should use surveys to gather information on school factors such as operations, the community's perception of the schools, and working conditions. Finally, Mertens and McLaughlin (2004) believed that surveys give researchers an advantage to gather information from a large group of people with efficiency.

5.2 RELIABILITY OF THE *SCHOOL PROFFESIONAL STAFF AS A LEARNING COMMUNITY SURVEY*

Observer agreement is the measure of reliability among the four members in each Professional Learning Community (Schuh, 2008). These observer agreements were calculated in percentage(s) of agreement through the use of marginal agreement, and are expressed in contingency tables. Frick and Semmel (1978) write that "Simple percent agreement can be calculated by comparing total frequencies of categories across a number of events" (pg. 164). Furthermore, simple percent agreement is a less stringent measure than Cohen's Kappa which requires .80 agreement (Frick and Semmel, 1978). Also, Cronbach's alpha is not needed in this study because the objective is not to determine internal consistency due to a small sample size.

The set of scores given below represents two observers from one team and their overall observer agreement which is a measure of marginal agreement. Throughout the rest of this study, the researcher calculated the observer agreement and displayed it in contingency tables. The result of calculating the marginal agreement shows the reliability between Professional Learning Community members.

Table 3:	Survey Data Entry Form for Grade 7, Team B, Science and Math Observers

	1a	1b		2a	2b	2c		3a	3b	3c	3d	3e		4a	4b		5a	5b	5c	5d	5e
Grade 7, Team B Science	4	4		4	5	4		4	5	3	3	3		1	1		3	4	4	2	4
Grade 7, Team B Math	4	3		5	5	5		3	5	5	5	5		3	2		5	4	5	3	3

Table 3 illustrates an example of one observation from two team members from Team B, seventh grade. If an item was left blank, it was noted as "NR" on the score sheet and was not counted. If a response was considered unclear or ambiguous when respondents entered a value between two values on the scale, a "0" was noted on the score sheet.

The data from Table 3 then appears in Table 4. A contingency table was then used to show how the survey question responses were recorded so that the researcher can calculate the marginal agreement between the two observers. As Schuh (2008) writes, "The marginal agreement for each of the smaller of the row or column is then divided by the larger of the two values" (pg. 118).

Table 4:   Observer Agreement from Grade 7, Team B Science and Math Teacher
            Grade 7, Team B

Math

Scale Responses	Column 1 5	Column 2 4	Column 3 3	Column 4 2	Column 5 1	Σ Row
(Row 1) 5	2					2
(Row 2) 4	3	2	3			8
(Row 3) 3	4					4
(Row 4) 2			1			1
(Row 5) 1			1	1		2
Σ Column	9	2	5	1	0	17 (COLUMN AND ROW TOTAL)

Science

Marginal Agreement = 1/5 (2/9+2/8+4/5+1/1) = 2.27/5 = .45

5.2.1 Marginal agreement calculation

It is important for school administrators to know that overall observer agreement is calculated to see how much variation there is between two content area teachers. Marginal agreement is the measure by which this completed. The reliability coefficients derived from the data will benefit both administrators and teachers as they compare the various constructs and questions from which there is a lack of agreement.

Marginal agreement is calculated (as in table 2) by doing the following:

1. Enter the fraction 1/5

2. Use an open parenthesis "("and take the numbers from column 5 and row 5;
    place the smaller number in the numerator and the larger in the denominator.

3. Take the numbers from column 4 and row 4; place the smaller number in the
    numerator and the larger in the denominator.

4. Take the numbers from column 3 and row 3; place the smaller number in the
    numerator and the larger in the denominator.

5. Take the numbers from column 2 and row 2; place the smaller number in the
    numerator and the larger in the denominator.

6. Take the numbers from column 1 and row 1; place the smaller number in the
    numerator and the larger in the denominator; then close with a closed
    parenthesis ")."

7. Divide each numerator by the denominator and enter each decimal value.

8. Add all decimal values together and divide by 5.

9. Enter the result (as in Table 2).

5.3   SUMMARY

The objective in this exploratory study of six Professional Learning Communities within one
high performing suburban middle school was to gather quantitative survey data which provided
the Professional Learning Communities with data that show variation of agreement in each

Professional Learning Community and provide overall data as to how Professional Learning Community members perceive their school staff as a learning organization.

As the study was conducted, the *SPSaLC* survey instrument, designed by Hord, was used due to its extensive use throughout the United States. In this study of six Professional Learning Communities within one middle school, the researcher found it beneficial to use an existing measure developed specifically to measure the five domains (shared and supportive leadership, shared values and vision, collective learning and application, shared personal practice, and supportive conditions) of Professional Learning Communities. By conducting this survey and analyzing the results, the researcher was able to provide the teachers in middle school how much variation exists within and between the six teams in grades 7 and 8. Additionally, the researcher was able to measure whether or not there was a possibility that the actual survey contains bias.

The principal indicated that it would be helpful to provide the results of the surveys once the study has been completed. The results can then be used as a guide to help teachers take a look at how the Professional Learning Community is functioning and possible areas where improvement is needed.

6.0   FINDINGS

6.0.1   Introduction

Today's school administrators are responsible for making important decisions about the curriculum in their respective schools as it relates to state accountability requirements of the No Child Left Behind Act. In a cooperative effort to satisfy that goal, the use of Professional Learning Communities has been increasing throughout the United States and has been written about in various contexts. Professional Learning Communities, which enable educators to focus more on curriculum, instruction, and assessment, also build teacher leadership within schools.

Before December 22, 2012, 19 of the 24 surveys were received by the researcher from the one middle school being studied. At that time, the 7th grade Team B responses and Team C's math teacher's survey from grade 8 were not submitted. As a result, the researcher contacted the principal in late January to give the status of what was received. The researcher sent another group of surveys for the Team B, grade 7 and 1 survey for the eighth grade math teacher who is on Team C. The surveys were sealed and were given directly to the Professional Learning Community facilitators. During the weeks of February 11 and 18, the researcher received all of the surveys Team B, Grade 7. Because the surveys were given to the before Christmas Break, the facilitator on the team happened to forget to give the surveys to the team members.

This intra-school exploratory study utilizes the marginal agreement measure set forth by Frick and Semmel (1978) whereby each pair of individuals within a team were treated as participant observers with regard to each statement of the *SPSaLC* survey.

6.1   DATA ANALYSIS

In this chapter, the responses to each survey question are provided in tables 5 - 8. The data show the actual score from each grade level, team, and subject area. The scores range from 1 to 5 with 5 indicating "most mature" and 1 indicating "least mature." If an item was left blank, it is noted as "NR" on the score sheet and is not counted. A response was considered unclear or ambiguous when wrote a value between two values on the scale, a "0" was noted on the score sheet.

Table 5 is an example of a completed data entry form for one team. The top row identifies each respondent's discipline and the left hand column identifies the questionnaire item. The complete set of data entry forms can be found in Appendix C. The data entry forms were checked by the researcher and rechecked by an independent senior evaluation researcher for consistency with the survey data and decision conventions. They were found to be accurate prior to proceeding to develop contingency tables with which to assess respondent agreement on the maturity of learning communities.

In Table 5 is an example of a Survey Data Entry Form for the four teachers on the Grade 7, Team A, Professional Learning Community. Overall results from each of the constructs of the survey are provided.

Table 5:   Example Data Entry Form

Grade 7, Team A

	English Language Arts	Social Studies	Science	Math	
1a	5	3	5	4	Construct 1
1b	5	NR	4	4	(shared and supportive leadership)
2a	5	3	5	3	Construct 2
2b	5	5	5	5	(shared values and vision)
2c	5	5	5	4	
3a	4	3	5	5	Construct 3
3b	5	4	5	4	(collective learning and application)
3c	NR	4	NR	4	
3d	4	4	5	4	
3e	4	4	5	4	
4a	3	2	3	3	Construct 4
4b	3	2	3	3	(shared personal practice)
5a	5	3	5	5	Construct 5
5b	5	3	5	5	(supportive conditions)
5c	5	4	5	5	
5d	4	4	5	4	
5e	4	4	5	4	

The data entry forms were used to develop a set of six 2x2 contingency tables which enabled me to calculate observer agreement for each team. These can be found in Appendices D and E. Within each team, there are a total of contingency tables used to measure the observation

agreement of items.   The six tables include: (1). The English Language Arts Teacher and the Social Studies Teacher; (2). The English Language Arts Teacher and the Science Teacher; (3). The English Language Arts Teacher and the Math Teacher; (4). The Social Studies Teacher and the Science Teacher; (5). The Social Studies Teacher and the Math Teacher; (6). The Science Teacher and the Math Teacher.

From the data entry sheet, the 17 possible responses from the English Language Arts Teacher and the 17 possible responses from the Social Studies Teacher were then placed in the appropriate cell. In doing so, the researcher would take the first survey response and vertically go up the scale responses column that is the very first column in the table and has English Language Arts labeled next to it. The researcher would then look for the survey response for the Social Studies Teacher and work to the right until the number would match with that of the survey response number. This process of using the x and y axis to tally the number of 17 responses was used in the possible 6 combinations of observations from each subject area teacher for each team. Therefore, in grade 7, the 18 contingency tables for Grade 7, Teams A, B, and C, are found in Appendix D. Furthermore, in grade 8, there were 15 contingency tables in Appendix E. Only 15 contingency tables in Appendix E are the result of the math teacher not returning the survey.

Table 6 demonstrates how scores were entered and used to assess marginal agreement as described by Frick and Semmel (1978). A contingency table shows how the researcher took each survey response and used each axis (column and row), to tally each of the 17 survey questions. If all 17 questions were answered by both teachers, the number 17 would appear in the box of the Σ Column cell that appears in the very last column to the right and in the Σ Row cell which is located in the very bottom row all the way to the right. If a number lower than 17

appears, that would be due to an observer not responding to an item; the no response would not be counted. In addition, giving an ambiguous response which would be placed between two numbers on the Likert Scale, would be counted as a zero. These were the two instances that would cause the cell to result in a number lower than 17.

Table 6: Example Contingency Table for the English Language Arts and Science teacher.
Grade 7, Team B

<div align="center">Science</div>

Scale Responses	5	4	3	2	1	Σ Row
5	1	2	3			6
4	1	6	1	1		9
3						0
2					2	2
1						0
Σ Column	2	8	4	1	2	17

(left axis label: English Language Arts)

Observer Agreement = 1/5 (2/6+8/9+1/2) = 1.72/5= .34

Contingency tables are used to show a pair of observations. In Table 4, the example contingency table is used to show the observation of an English Language Arts Teacher and a science teacher. As shown, the English Language Arts teacher's responses are indicated on the rows while the science teacher's responses are shown on the column. After the researcher matches the y axis with the English Language Arts teacher's response, he would then locate the x axis cell for the response of the science teacher. These would be totaled after all 17 possible items are totaled. In Table 4, the

English Language Arts teacher and science teacher both scored one item with a "5." Moving to the right of the row, the English Language Arts teacher rated 2 items with a "5" while the science teacher rated the 2 items with a "4." As one progresses further to the right in the row, the English Language Arts teacher rated 3 items with a "5" while the science teacher rated 3 items with a "3." Since no other values are entered in the row, the researcher adds the 1, 2, and 3, and places the total of 6 in the Σ row cell.

Similarly, if one would look at the English Language Arts teacher's responses scale responses and the science teacher's scale responses, one would see that in one case the English Language Arts rated an item with a "5" while the science teacher also rated an item with a "5." As one looks down the y axis of the "5" column, he or she will also see that the English Language Arts teacher rated an item with a "4" while the science teacher rated the item with a "5." Since those are the only two observations made in the column, the total is 2 and appears as 2 where the Σ column is found. The same format is done with the remaining columns as one moves to the right and finally to the "1" column.

The number 17 is a way to check to see how many responses were given by the participants. The researcher calculates this by first counting each row and indicating that total in the Σ Row cell. The next step is to count down the Σ Row's cell column and add each number. If the result is 17, then each question was answered.

The number 17 is then totaled by counting downward in each column (moving to each right column) and entering that sum in each of the Σ Column's cells (the very last row of the table). As the researcher totals those numbers in the row, he or she would then be able to get a total of 17 if each survey question was answered.

Finally, the researcher calculates the agreement by using the fraction 1/5 and multiplying it by the smaller number in the column or row as the numerator over the larger number in the numerator or denominator. The process is repeated for each column and row. Finally, the fraction 1/5 is multiplied with the value shown from the fractions that appear in parentheses below which will then give the percentage agreement.

6.1.0   Observer agreement by teams

Table 7 shows a summary of the calculated agreements of the three teams for grade 7. For Team A in grade 7, the scores range from .11 percent agreement for the social studies and science teacher agreement to .38 percent agreement for the English Language Arts and science teacher agreement. For Team A, there is no overall agreement.

For Team B, the percent agreement is .18 is found for the English Language Arts and social studies teacher agreement while .50 agreement was found with the agreement of the social studies and science teacher. Team B has the highest agreement of .50 which would be modest.

Team C has a low agreement .20 which was found for the science and math teacher while the highest agreement of .34 was found in the comparison of the English Language Arts and math teacher. Again, none of the scores show much agreement.

Since the scale of agreement is 0 to 1 (perfect agreement), .67 is required to show overall agreement and .80 is needed to produce a statistical significance using Cohen's Kappa (Frick and Semmel, 1978). Based on the range of scores, there clearly is no overall agreement. Team B's pair of social studies and science observations at .50 would be considered at best modest agreement.

Table 7:   Summary of Overall Observer Agreement for Teams A, B, and C of Grade 7

Grade 7 Professional Learning Communities Variation

	Grade 7 Professional Learning Communities		
	Team A	Team B	Team C
ELA/SS	.30	.18	.24
ELA/SCI	.38	.34	.28
ELA/MATH	.37	.28	.34
SS/SCI	.11	.50	.28
SS/MATH	.38	.24	.26
SCI/MATH	.24	.45	.20

Note: ELA= English Language Arts; SS= Social Studies; SCI= Science

The same procedure was used in producing Table 8 to display the variation of Teams A, B, and C in grade 8. For Team A in grade 8, the scores range from .22 percent agreement for the English Language Arts and math teacher while .43 was calculated for the social studies and science teacher. For Team A, there is no overall agreement.

For Team B, the percent agreement is .23 was found for the social studies and math teacher while .57 was found for the science and math teacher. Team B has the highest agreement of .57 for the agreement of the science and math teacher which would be modest.

Team C's math teacher did not respond; therefore, three values are missing from the range of scores in Table 6, Team C. Team C has a low agreement .17 which was found for the English Language Arts and science teacher while .43 was found for the English Language Arts

and social studies teacher. The agreement of .43 for the English Language Arts and social studies teacher shows no agreement. Based on these range of scores for Team A, B, and C, no overall agreement was indicated.

Table 8:   Summary of Overall Calculated Observer Agreement for Teams A, B, and C of Grade 8

Grade 8 Professional Learning Communities Variation

Grade 8

Professional Learning Communities

	Team A	Team B	Team C
ELA/SS	.37	.30	.43
ELA/SCI	.27	.37	.17
ELA/MATH	.22	.53	
SS/SCI	.43	.34	.23
SS/MATH	.23	.23	
SCI/MATH	.28	.57	

Note: ELA= English Language Arts; SS= Social Studies; SCI= Science

From the overall agreement shown in Table 7 and 8, both grades 7 and 8 are similar in that there is no overall agreement that shows any substantial statistical difference.

6.1.1 Assessing observer agreement by subject area in each grade level

In the absence of finding agreement, the researcher completed a further analysis to see if anything had been overlooked. The researcher went further and assessed the agreement of the 7th grade team subject areas (see Table 9) against each other and the 8th grade teams and their subject areas (see Table 10). In this section, the researcher compared the following: (1) Team A to Team B; (2). Team A to Team C; (3). Team B to Team C. This process was done for the grade 7 level and the grade 8 level. The calculations for Tables 7 and 8 can be found in both Appendix F and Appendix G.

Table 9:   Summary of Overall Calculated Observer Agreement for Grade 7 Subject Areas
              of Teams A, B, and C

Grade 7, Subject Area Comparisons of Teams A, B, and C

Subject Area	Team A to Team B	Team A to Team C	Team B to Team C
ELA	.22	.37	.37
SS	.34	.39	.11
SCI	.19	.48	.21
MATH	.31	.34	.25

Note: ELA= English Language Arts; SS= Social Studies; SCI= Science

From the data presented in table 9, there is no overall agreement of subject areas in grade seven's comparisons of teams. The highest agreement of .48 which represents the comparison of Team A to Team C's science teachers does not approach overall agreement.

Table 10:   Summary of Overall Calculated Observer Agreement
            for Grade 8 Subject Areas of Teams A, B, and C

Grade 8, Subject Area Comparisons of Teams A, B, and C

Subject Area	Team A to Team B	Team A to Team C	Team B to Team C
ELA	.30	.21	.32
SS	.22	.47	.14
SCI	.36	.22	.41
MATH	.40		

Note: ELA= English Language Arts; SS= Social Studies; SCI= Science

From the data presented in table 10, there is no overall agreement of subject areas in grade eight's comparisons of teams. The highest agreement of .47 represents the comparison of Team A to Team C's social studies teachers.

6.1.2 Observer agreement by grade level teams

After comparing subject areas by teams, the researcher was not able to conclude that calculated overall observer agreement for grade 7 and grade 8 subject areas of Teams A, B, and C showed any significance in the analysis.

Therefore, the researcher next compared the grade level teams to see if there was agreement at the team level. The results of that analysis are shown in Table 11. Since the researcher has not found any overall observer agreement to this point, the next analyses compared the 7th grade Professional Learning Communities' teams to the 8th grade Professional Learning Communities. Please note that Team C for 8th grade does not contain survey data due to the team member, the math teacher, being unavailable. The lowest percent agreement is found

in Team A's math comparison and Team B's social studies comparison. The comparison of

grade seven's Team B to grade eight's Team B showed the highest observer agreement yet.

This was the only approach in which overall observer agreement came close to reaching

an overall agreement of .67. In this approach of comparing subject area teachers based on grade

level, .66 was the overall agreement for the science teachers and .74 for the math teachers. This

was not that case in any other pair of observers.

Table 11:   Summary of Overall Calculated Marginal Agreement between
             Grade 7 Team A and Grade A Team A; Grade 7 Team B and Grade
             8 Team B; Grade 7 Team C and Grade 8 Team C

Grade 7 to Grade 8 Team Comparisons

	Team A	Team B	Team C
ELA	.29	.27	.25
SS	.27	.15	.35
SCI	.17	.66	.19
MATH	.15	.74	

Note: ELA= English Language Arts; SS= Social Studies; SCI= Science

6.1.3 Distribution of scores

As the data from the surveys were analyzed by team and grade levels from this analysis, the

researcher compiled a summary of scores for all Professional Community Members in grade 7

and grade 8.

Even though there was no overall observer agreement, the researcher noticed a marked

tendency for the responses to be at the high end of the five point Likert Scale in the "4" or "5"

rating score. This is shown in Tables 12 and 13. In Table 12, a summary of the distribution of

scores for all of the grade 7 teachers is presented. Grade 8's distribution of scores is shown in

Table 13. The data in both of the tables show an uneven distribution of scores either in the "5" or "4" category.

Table 12: Overall Observer Responses for Grade 7

Score	ELA	SS	Sci	Math	Totals
5	20	11	27	17	75
4	23	21	12	23	79
3	5	10	8	9	32
2	2	4	1	2	9
1	0	1	2	0	3
					198

Note: ELA= English Language Arts; SS= Social Studies; SCI= Science

Table 13:   Overall Observer Responses for Grade 8

Score	ELA	SS	Sci	Math	Totals
5	27	20	16	19	82
4	14	25	25	7	71
3	5	4	9	5	23
2	2	2	1	3	8
1	2	0	0	0	2
					186

Note: ELA= English Language Arts; SS= Social Studies; SCI= Science

Table 14 displays the uneven distribution of scores with a heavy emphasis in the stage 4 or stage 5 category. Because of this uneven distribution, there is no overall agreement as to what it is that a 4 or a 5 means with regard to the maturity of the two grade levels. Similarly, in Appendix I, the researcher shows the uneven distribution of the 4 and 5 score by grade level and subject level.

Table 14: Distribution of Grade 7 and 8 Scores

Score	5	4	3	2	1
Grade 7	38%	40%	16%	5%	2%
Grade 8	44%	38%	12%	4%	1%

Note: Percentages may not total to 100 due to rounding

Table 14 shows that approximately 78 percent of the 7th grade responses and 82 percent of the 8th grade responses indicate that the Professional Learning Communities are mature and indicate that the measurement category scores are unreliable. The overall agreement may reflect the lack of the measurement's reliability.

6.2   CONCLUSIONS ABOUT THE FINDINGS OF USING THE *SPSalC* SURVEY

Based on the findings, the researcher made his conclusions about The *School Professional Staff as a Learning Community* survey instrument as it relates to the research questions

Research Question 1:

Does the *SPSaLC* survey addresses the 5 constructs (shared and supportive leadership, shared values and vision, collective learning and application, shared personal practice, and supportive conditions) that are essential in Professional Learning Communities?

Conclusion

Hord (1997) postulated that Professional Learning Communities would provide the 10 following changes that she felt were important for teachers:

1. "reduction of isolation of teachers;

2. increased commitment to the mission and goals of the school and increased vigor in working to strengthen the mission;

3. shared responsibility for the development of students and collective responsibility for students' success;

4. powerful learning that defines good teaching and classroom practice, that creates new knowledge and beliefs about teaching and learners

5. increased meaning and understanding of the content that teachers teach and the roles that they play in helping all students achieve expectations;

6. higher likelihood that teachers will be well informed, professionally renewed, and inspired to inspire students;

7. more satisfaction and higher morale, and lower rates of absenteeism;

8. significant advances into making teacher adaptations for students, and changes for learners made more quickly in traditional schools;

9. commitment to making significant and lasting changes; and

10. higher likelihood of undertaking fundamental, systemic change "(p. 29).

The survey gives the participants the opportunity to assess their perceptions of their Professional Learning Communities during the one administration.   Using the method of calculating observer agreement through the measure of marginal agreement, does not work well when calculating observer analysis on a developmental level.

Research Question 2:

To what extent does the *SPSaLC* model work at analyzing the internal processes of Professional Learning Communities within one school?

Conclusion

The *SPSaLC* is limited in analyzing the internal processes of Professional Learning Communities within one school.

First, there was no agreement among the observers regarding the reduction of isolation. Therefore, there is no way to determine whether Professional Learning Communities would work with regard to making teachers feel less isolated or improve conditions of isolation.

Second, administering the survey helped the researcher provide feedback in each of the constructs and how an entire grade level or school viewed itself. When I took the data and used it to measure observer agreement between observers (Frick and Semmel, 1978), I realized that the survey is best suited to provide an overall result to stakeholders rather than looking at the reliability coefficients derived from comparing observer agreement through the use of contingency tables. The method of determining observer agreement shows that there is a lack of agreement as opposed to calculating a groups' perception of its school based on using a Likert Scale.

Third, the survey does not address any evidence of change or outcomes that have come about due to the development of Professional Learning Communities in one school with two grade levels.

Fourth, it is difficult to determine if Professional Learning Communities with a school improves teaching, especially when each team consists of 4 subject area teachers. More teachers may be needed; Hord (1997) also recommended that an administrator be a member of each Professional Learning Community.

In this study, there were only two cases where a 7th grade and 8th grade math teacher had a percent agreement of .74. In the other case, a 7th grade and 8th grade science teacher had a percent agreement of .66.

Research Question 3:

Does the *SPSaLC* survey discriminate in measuring the maturity of Professional Learning Communities within one school?

Conclusion

The response patterns of all teams at both grade levels do not reveal differences in stage of maturity among the Professional Learning Communities in the high performing Southwestern Pennsylvania Middle School.

7.0   DISCUSSION AND CONCLUSIONS:

7.0.1   Collective survey results and distribution of grade 7 and grade 8 survey responses

A complete summary of the grade 7 and grade 8 survey results is located in Table 12 of Chapter 4. The score sheets in Appendix C show individual responses from each 7th grade and 8th grade team and a summary of the subject areas appears in Appendix I.

With regard to the distribution of scores for all of the questions in the survey, *78 percent of 7th grade teachers responded with a "4" or "5" while 82 percent of the 8th grade teachers responded with a "4" or "5."* This high percentage suggests that the Professional Learning Community model is important and valued by the staff and provides useful information to all of Professional Learning Communities and school administration. This information comes from four important areas of the survey. Lastly, when percentages are expressed in each of the constructs of this discussion, the average will consist of scores of a "4" or "5" from both the grade 7 and grade 8 responses. If an overall average does not consist of an average of the scores of a "4" or "5," that was noted.

7.0.2   Shared and supportive leadership

The first construct of the survey asked questions about staff being involved in the decision making process along with administrators. *The results show that a collective average of 75 percent of the teachers feel they were involved in the decision making process of the school.*

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The involvement of staff in decision making of schools supports autonomy, teacher input, Professional Learning Community Facilitators, and overall teacher leadership. Roberts and Pruitt (2009) cite the 1998 work of Lambert in which Lambert believed that the entire school community must be focused on learning and leading together. Expectations for professional learning community members according to Lambert include a:

"Responsibility for the performance of peers will probably be readily accepted where teachers work together in highly integrated teams; team members have more at stake in the performance of fellow teachers and have considerable opportunity to observe their work activities" (p. 237).

DuFour (2004) in fact, wrote that "In order for teams to be successful, team members must deal with roles and responsibilities, protocols regarding their roles, relationships among members and focus on adopting a mindset that student achievement goals need to be tied to the district's goals" (p. 10).

Borko (2004) added another view of teacher leadership with the following:

"For teachers, learning occurs in many different aspects of practice, including their classrooms, their school communities, and professional development courses or workshops. It can occur in a brief hallway conversation with a colleague or after school when counseling a troubled child. To understand teacher learning, we must study it within these multiple contexts, taking into account both the

individual teacher-learners and the social systems in which they are participants"
(p.4).

7.0.3 Shared values and vision

Shared values and vision are important to the staff, according to the second construct of the survey (questions 2a-2c). These questions include having a vision for the school and the learning process. The survey results, based on the average of questions 2a through 2c, indicate that *94 percent of the teachers feel there is a strong focus on learning and their vision of improving the learning experiences for students.* Evidence that support these characteristics can be found in the literature of DuFour (2004), Hord and Sommers (2008), and Conley and Goldman (1994).

DuFour (2004), believed that "The PLC model flows from the assumption that the core mission of formal education is not simply to ensure that students are taught but to ensure that they learn" (p. 7).

Hord and Sommers (2008) wrote that "Together the staff members engage in powerful learning that adds to their knowledge base and repertoire of technical skills that increases their effectiveness (p. 19).

In addition, facilitative leadership can be considered a part of this particular construct of the survey. My study does show that the teachers in the study prefer being teacher-leaders. Being a teacher-leader describes facilitative leadership which, according to Conley and Goldman (1994), stated that "The behaviors that enhance the collective ability of a school to adapt, solve problems, and improve performance" (p. 238).

7.0.4 Collective learning and application

The collective learning and application section of the survey addresses, as stated in the survey, the areas of "application of the learnings, taking action, creating high intellectual learning tasks and solutions to address student needs."

This section of the survey consisted of five questions (3a-3e). From the survey responses, *this entire section received a collective average rating of 90 percent*. DuFour (2004) addressed the area of collective learning and application by stating that he saw the purpose of developing a professional learning community so that teachers can address questions such as what they want students to learn, how the student learns and how the members of the professional learning community would respond when a student experienced difficulty in learning.

In addition, DuFour (2004) highly recommended collaboration in professional learning communities; he wrote that collaboration is needed so that educators can deal with reflection so that the meaning of the professional learning community is not lost.

7.0.5 Shared personal practice

In this section of the survey, questions 4a and 4b show that the Professional Learning Community members seem to lack opportunities to share personal practice. The survey specifically states in 4a that "Staff members regularly and frequently visit and observe one another's classroom teaching. With regard to this question, *all 7ᵗʰ grade teachers responded with a "3" or a "2."* Eighth grade responses consisted of 99 percent responding with a "3."

Question 4b stated that *"Staff members provide feedback to one another about teaching and learning based on their classroom observations."* With regard to this question, *81 percent*

of 7th grade teachers responded with a "3," or less. The responses from the 8th grade teachers consisted of 80 percent of the responses with a "3" and 30 percent of the responses with a "3" or less.

Related to this aspect of Professional Learning Communities, Hord and Sommers (2008) wrote that "No Child Left Behind has been compelling to educators forcing them to examine what they do, how they do it, and the effects it has on students" (p. 58).

Wilhelm (2009) wrote that "Teachers have not done much with differentiation in instruction and that "formal training and follow-up coaching" have not been implemented (p. 32).

It is very important to note that these two questions do not imply that teachers do not want the opportunities to observe each other and provide feedback. Rather, it is stating that they would like to have the opportunity to observe their colleagues and discuss instructional matters or other issues that pertain to Professional Learning Communities, instruction, student achievement or other related issues.

7.0.6   School conditions that support the model of professional learning communities

This section of the survey consisted of questions 5a-5e. The section deals specifically with supportive conditions and collaboration that are needed for Professional Learning Communities. From the results of the survey, 90 percent of the 7th and 8th grade teachers felt that their school does provide supportive conditions such as the following: productive relationships, openness and time for staff to meet. Several authors support this in their writing.

Roberts and Pruitt (2009) cited the work of Roland Barth, who in 1990 defined a learning community as "A place where students and adults alike are engaged as active learners in matters of special importance to them and where everyone is thereby encouraging everyone else's learning" (p. 9).

Hord and Sommers (2008) stated that six areas that deal with collegial learning and collaborative work are essential. Those areas include the following:

"Identifying an area or issue that requires staff's change of knowledge and skills; deciding what to learn to gain new knowledge; engaging in the learning; applying the learning appropriately in classrooms; applying the learning appropriately in classrooms; debriefing with colleagues; revising, based on the new learning experience" (pp. 144-145).

By recognizing the important elements that are necessary to establishing and sustaining Professional Learning Communities, administrators must recognize the importance of presenting their staff members with current literature and professional development activities and provide research-based practices of where Professional Learning Communities have been working throughout the country.

7.1   IMPLICATIONS AND RECOMMENDATIONS

Professional Learning communities have been advocated as one method of improving the educational environment with an emphasis on changes within schools that would help teachers.

The School Professional Staff as a Learning Community (*SPSaLC*) survey was developed to measure Professional Learning Communities' developmental maturity as indicated by five constructs: shared and supporting leadership, shared values and vision, collective learning and application, shared personal practice, and supportive conditions as measured by individual responses on a five-point Likert-type scale.

The reliability and validity of the scale was asserted as a result of a study by Hord (1997). The argument validity of the scale was predicated on pilot tests indicating that the instrument "discriminated" among schools.

*The simple objective of this study was to see if the SPSaLC discriminated among individual Professional Learning Communities **within** a school.* Classroom observation methods were employed whereby teachers of the Professional Learning communities were considered as participant observers and their survey responses were analyzed for reliability on scoring the *SPSaLC*.

Two major findings emerged from my analyses: (1) The assessment of the stage of maturity was unreliable both among team members and among teams and (2) there was an extreme high-end response bias among teams' members and among teams.

At first glance these findings might appear contradictory. On one hand, there is no agreement on the stages of maturity. On the other hand, there is an almost overwhelming evidence of agreement on a high-level of maturity.

7.1.1 Implications of the two overall findings

1. The lack of overall agreement on the five stages of Professional Learning Community maturity might be explained in several ways.

First, one explanation might be that the items are not developmentally differentiated and therefore are inadequate indicators of the survey questions in each of the five constructs.

Second, when discussing maturation with regard to Professional Learning Communities, one needs to recognize that community maturity is a developmental process. The items on the scale might not be indicating developmental attributes of community maturation such as the first attribute of the survey which states "School administrators participate democratically with teachers sharing power, authority, and decision making." There may be no developmental sequence on the scale, and there may be different attributes on each point of the Likert Scale.

Third, measuring community maturity is a process of detecting change. The survey instrument needs to be improved so that it could measure change.

Fourth, the school's interpretation of Professional Learning Communities as a team of teachers may not have coincided with the original Professional Learning Community concept of integrating other school staff members such as guidance counselors or administrators.

2. There could be factors that may contribute to the response bias toward the high community maturity at the end of the scale in the areas of a "4" or "5."

A. Hord's (1997) assertions that the instrument discriminated among schools may be entirely correct. It may not, however, be discriminating the maturity of Professional Learning Communities but rather some other school-level attribute.

B.　　The simplest explanation for the lack of agreement of the Professional Learning Community maturity level combined with the high end bias of the scores is that the *SPSaLC* discriminates on school performance rather than the maturity of the Professional Learning Communities.

7.2 OVERALL CONCLUSIONS AND RECOMMENDATIONS FOR ADMINISTRATORS AND THOSE WANTING TO START USING PROFESSIONAL LEARNING COMMUNITIES IN THEIR SCHOOL

Before attempting to implement Professional Learning Communities within one's school, I would advise principals to read the current literature and studies that detail the various aspects that have worked successfully for schools that have done so. By doing this, administrators give themselves the opportunity to explore literature that demonstrates the various aspects of their district, resources, and logistics that have been required in schools where Professional Learning Communities have worked successfully. More importantly, I recommend that administrators consider the following:

1.　　*The instrument should not be used for performance based assessments* because the instrument does not appear appropriate for measuring Professional Learning Communities at the team level for Professional Learning Community maturity.

2.   The use of teachers as participant observers in assessing Professional Learning

     Communities is not a reliable method. Self-assessments tend to be biased at the high end

     of the scale.

3.   If anyone wants to attempt to examine change with the instrument, he or she needs to

     administer the instrument more than once.

4.   The questionnaire could be improved by making it measure Professional Learning

     Community development rather than self-reported perceptions.

5.   Attempt a similar study in another school at the same grade levels but make certain that

     the school has a lower performance rating.

7.3 LIMITATIONS OF THE STUDY

The researcher acknowledges several limitations to this study that may have influenced the

results and should be considered in future Professional Learning Community research and those

wanting to start assessing their Professional Learning Communities by using this instrument.

1.   This was a study at only one high-performing school. Extending to other schools

     might provide more insight about the instrument's utility.

2.   Since the study was conducted in a two-grade middle school, the researcher was

     limited to study two grade levels. One could expand upon the study to different

     schools and other grade levels.

3.   The survey was administered one time only.   Pre-term and post-term administrations might reveal some change in perceptions of maturation.

7.4   RECOMMENDATIONS FOR ADMINISTRATORS AND POLICY

Although the results of the study indicate little agreement with Frick and Semmel's (1978) method for calculating two classroom teachers as if they were actual classroom teachers observing phenomenon, the overall average (mean) of the teachers of grades 7 and 8 indicate that Professional Learning Communities are working in this school. In addition, because of the high percentage of agreement from the 23 of 24 teachers who volunteered to participate in the survey, one could conclude that sustainability of the Professional Learning Community model be continued as it relates to the current literature, governmental mandates, and student achievement.

Based on the analysis of the results, review of the literature, and participation in Professional Learning Communities, I recommend the following to teachers and school administrators:

1. Establish the mission and objectives of the Professional Learning Community at the start of each school year and post it in the meeting room
2. Focus each meeting on student-related matters and achievement
3. Attend meetings on occasion
4. Encourage guidance counselors to attend meetings on occasion

5. Use data as a means to drive the sessions so that they focus on students and decisions that are made

6. Assign a new Professional Learning Community Facilitator each grading quarter

7. Try to design opportunities where teachers are given the opportunities to observe peers or participate in walkthrough observations

8. Take notes during each meeting for documentation and encourage reflection as part of the entries

9. Use in-service days for co-curricular meetings so that subject area teachers are collaborating about course content and curriculum based assessments

10. Seek suggestions and welcome comments from individuals or Professional Learning Communities

7.5   FURTHER RESEARCH

This exploratory study has been completed by a classroom teacher for other classroom teachers across the country. *It is the hope of the researcher this study provides a methodological approach to the K-12 education community whereby teachers do not need to be required to have a certain sample size to measure agreement.* The method of marginal agreement goes back to 1978 and can still be used as it is in this study. It is also important to note that the overall opinions that are analyzed with regard to averages and frequencies are important as well.

With more research such as this, administrators, the instructional leaders of today's schools, will be better equipped to evaluate various educational models in their school(s) in addition to educational programs. Teachers and administrators face new challenges each year

and need to keep abreast of current literature on best practices as they deal with program

planning and evaluation and the administrator turnover rates across the country.

APPENDIX A

SCHOOL PROFESSIONAL STAFF AS LEARNING COMMUNITY QUESTIONNAIRE

School Professional Staff as Learning Community Questionnaire

Directions: This questionnaire concerns your perceptions about your school staff as a learning organization. There are no right or wrong responses. Please consider where you believe your school is in its development of each of the five numbered descriptors shown in bold-faced type on the left. Each sub-item has a five-point scale. On each scale, circle the number that best represents the degree to which you feel your school has developed.

Date: _____

Name: _____

School: _____

---

1. School administrators participate democratically with teachers sharing power, authority, and decision making.

1a

5	4	3	2	1
Although there are some legal and fiscal decisions required of the principal, school administrators consistently involve the staff in discussing and making decisions about school issues.		Administrators invite advice and counsel from staff and then make decisions themselves.		Administrators never share information with the staff nor provide opportunities to be involved in decision making.

1b

5	4	3	2	1
Administrators involve the entire staff.		Administrators involve a small committee, council, or team of staff.		Administrators do not involve any staff.

---

2. The staff shares visions for school improvement that have an undeviating focus on student learning, and these visions are consistently referenced in the staff's work.

2a

5	4	3	2	1
Visions for improvement are discussed by the entire staff such that consensus and a shared vision result.		Visions for improvement are not thoroughly explored; some staff members agree and others do not.		Visions for improvement held by the staff members are widely divergent.

2b

5	4	3	2	1
Visions for improvement are always focused on students, teaching, and learning.		Visions for improvement are sometimes focused on students, teaching, and learning.		Visions for improvement do not target students, teaching, and learning.

2c

5	4	3	2	1
Visions for improvement target high-quality learning experiences for all students.		Visions for improvement address quality learning experiences in terms of students' abilities.		Visions for improvement do not include concerns about the quality of learning experiences.

3. The staff's collective learning and application of the learnings (taking action) create high intellectual learning tasks and solutions to address student needs.

3a

5	4	3	2	1
The entire staff meets to discuss issues, share information, and learn with and from one another.		Subgroups of the staff meet to discuss issues, share information, and learn with and from one another.		Individuals randomly discuss issues, share information, and learn with and from one another.

3b

5	4	3	2	1
The staff meets regularly and frequently on substantive student-centered educational issues.		The staff meets occasionally on substantive student-centered educational issues.		The staff never meets to consider substantive educational issues.

3c

5	4	3	2	1
The staff discusses the quality of their teaching and students' learning.		The staff does not often discuss their instructional practices nor its influence on student learning.		The staff basically discusses non-teaching and non-learning issues.

3d

5	4	3	2	1
The staff, based on their learnings, makes and implements plans that address students' needs, more effective teaching, and more successful student learning.		The staff occasionally acts on their learnings and makes and implements plans to improve teaching and learning.		The staff does not act on their learning.

3e

5	4	3	2	1
The staff debriefs and assesses the impact of their actions and makes revisions.		The staff infrequently assesses their actions and seldom makes revisions based on the results.		The staff does not assess their work.

---

4. Peers review and give feedback based on observing one another's classroom behaviors in order to increase individual and organizational capacity.

4a

5	4	3	2	1
Staff members regularly and frequently visit and observe one another's classroom teaching.		Staff members occasionally visit and observe one another's teaching.		Staff members never visit their peers' classrooms.

4b

5	4	3	2	1
Staff members provide feedback to one another about teaching and learning based on their classroom observations.		Staff members discuss non-teaching issues after classroom observations.		Staff members do not interact after classroom observations.

5. School conditions and capacities support the staff's arrangement as a professional learning organization.	5a	5 _____ 4	3	2 _____ 1
		Time is arranged and committed for whole staff interactions.	Time is arranged but frequently the staff fails to meet.	Staff cannot arrange time for interacting.
	5b	5 _____ 4	3	2 _____ 1
		The size, structure, and arrangements of the school facilitate staff proximity and interaction.	Considering the size, structure, and arrangements of the school, the staff are working to maximize interaction.	The staff takes no action to manage the facility and personnel for interaction.
	5c	5 _____ 4	3	2 _____ 1
		A variety of processes and procedures are used to encourage staff communication.	A single communication method exists and is sometimes used to share information.	Communication devices are not given attention.
	5d	5 _____ 4	3	2 _____ 1
		Trust and openness characterize all of the staff members.	Some of the staff members are trusting and open.	Trust and openness do not exist among the staff members.
	5e	5 _____ 4	3	2 _____ 1
		Caring, collaborative, and productive relationships exist among all staff members.	Caring and collaboration are inconsistently demonstrated among the staff members.	Staff members are isolated and work alone at their task.

Hord, Shirley M. (1996). *School Professional Staff as Learning Community Questionnaire.*
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APPENDIX B

SEDL LICENSE AGREEMENT

ADVANCING RESEARCH

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IMPROVING EDUCATION

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Sincerely,

_____   _____
Nancy Reynolds for SEDL   Date signed   July 26, 2012

Agreed and accepted:

Signature _____   Date signed 7-26-12

Printed Name _____ James L. Shasteen Jr

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APPENDIX C

DATA ENTRY SCORE SHEETS

Table C1, Data Entry Form

Grade 7, Team A

	English Language Arts	Social Studies	Science	Math
1a	5	3	5	4
1b	5	NR	4	4

Construct 1
(shared and supportive leadership)

	English Language Arts	Social Studies	Science	Math
2a	5	3	5	3
2b	5	5	5	5
2c	5	5	5	4

Construct 2
(shared values and vision)

	English Language Arts	Social Studies	Science	Math
3a	4	3	5	5
3b	5	4	5	4
3c	NR	4	NR	4
3d	4	4	5	4
3e	4	4	5	4

Construct 3
(collective learning and application)

	English Language Arts	Social Studies	Science	Math
4a	3	2	3	3
4b	3	2	3	3

Construct 4
(shared personal practice)

	English Language Arts	Social Studies	Science	Math
5a	5	3	5	5
5b	5	3	5	5
5c	5	4	5	5
5d	4	4	5	4
5e	4	4	5	4

Construct 5
(supportive conditions)

Table C2, Data Entry Form

Grade 7, Team B

	English Language Arts	Social Studies	Science	Math	
1a	4	4	4	4	Construct 1
1b	5	4	4	3	(shared and supportive leadership)
2a	4	4	4	5	Construct 2
2b	5	4	5	5	(shared values and vision)
2c	4	4	4	5	
3a	4	3	4	3	Construct 3
3b	4	3	5	5	(collective learning and application)
3c	5	4	3	5	
3d	5	3	3	5	
3e	4	4	3	5	
4a	2	1	1	3	Construct 4
4b	2	NR	1	2	(shared personal practice)
5a	5	0	3	5	Construct 5
5b	5	3	4	4	(supportive conditions)
5c	4	4	4	5	
5d	4	3	2	3	
5e	4	4	4	3	

Table C3, Data Entry Form

Grade 7, Team C

	English Language Arts	Social Studies	Science	Math	
1a	3	5	4	4	Construct 1
1b	5	4	3	4	(shared and supportive leadership)
2a	4	5	5	3	Construct 2
2b	5	5	5	4	(shared values and vision)
2c	4	5	5	4	
3a	4	4	5	5	Construct 3
3b	5	5	5	4	(collective learning and application)
3c	4	5	4	4	
3d	4	5	5	4	
3e	4	5	4	4	
4a	3	2	3	2	Construct 4
4b	3	2	5	4	(shared personal practice)
5a	5	4	5	5	Construct 5
5b	4	4	5	4	(supportive conditions)
5c	5	5	5	5	
5d	4	4	5	4	
5e	4	4	5	4	

Table C4, Data Entry Form

Grade 8, Team A

	English Language Arts	Social Studies	Science	Math	
1a	3	4	4	4	Construct 1
1b	3	3	4	5	(shared and supportive leadership)
2a	2	4	5	4	Construct 2
2b	4	4	5	5	(shared values and vision)
2c	4	4	5	5	
3a	3	4	4	5	Construct 3
3b	5	5	5	5	(collective learning and application)
3c	4	5	5	4	
3d	4	5	5	5	
3e	4	5	4	4	
4a	1	3	3	2	Construct 4
4b	1	5	4	2	(shared personal practice)
5a	5	5	5	5	Construct 5
5b	4	4	5	5	(supportive conditions)
5c	4	5	5	5	
5d	4	4	4	5	
5e	4	4	4	5	

Table C5, Data Entry Form

Grade 8, Team B

	English Language Arts	Social Studies	Science	Math	
1a	5	4	4	4	Construct 1
1b	4	4	3	3	(shared and supportive leadership)
2a	4	4	4	4	Construct 2
2b	5	5	4	5	(shared values and vision)
2c	5	5	5	5	
3a	5	4	3	3	Construct 3
3b	5	4	4	5	(collective learning and application)
3c	5	4	5	5	
3d	5	4	4	5	
3e	4	4	4	5	
4a	2	2	2	2	Construct 4
4b	NR	2	3	3	(shared personal practice)
5a	5	4	4	5	Construct 5
5b	5	4	3	3	(supportive conditions)
5c	5	5	5	3	
5d	5	4	5	4	
5e	5	4	5	5	

Table C6, Data Entry Form

Grade 8, Team C

	English Language Arts	Social Studies	Science	Math	
1a	5	5	3		Construct 1
1b	5	5	4		(shared and supportive leadership)
2a	5	5	4		Construct 2
2b	5	5	4		(shared values and vision)
2c	5	5	4		
3a	5	4	4		Construct 3
3b	5	4	5		(collective learning and application)
3c	4	5	4		
3d	5	5	4		
3e	5	5	5		
4a	3	3	3		Construct 4
4b	3	3	3		(shared personal practice)
5a	5	4	4		Construct 5
5b	5	5	4		(supportive conditions)
5c	5	5	4		
5d	4	4	3		
5e	3	4	4		

APPENDIX D

GRADE 7 CONTINGENCY TABLES

Table D1:   Observer Agreement from Grade 7, Team A
              English Language Arts Teacher and Social Studies Teacher

Social Studies

English Language Arts

Scale Responses	5	4	3	2	1	Σ Row
5	2	2	4			8
4		4	1			5
3				2		2
2						0
1						0
Σ Column	2	6	5	2	0	15

Marginal Agreement = 1/5 (2/8+5/6+2/5) = 1.48/5= .30

Table D2:   Observer Agreement from Grade 7, Team A
             English Language Arts Teacher and Science Teacher

Science

Scale Responses	5	4	3	2	1	Σ Row
5	8	1				9
4	5					5
3			2			2
2						0
1						0
Σ Column	13	1	2	0	0	16

Marginal Agreement = 1/5 (9/13+1/5+1) = 1.89/5 = .38

Table D3:   Observer Agreement from Grade 7, Team A
             English Language Arts Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	4	4	1			9
4	1	4				5
3			2			2
2						0
1						0
Σ Column	5	8	3	0	0	16

English Language Arts

Marginal Agreement = 1/5 (5/9+5/8+2/3) = 1.86/5 = .37

Table D4:   Observer Agreement from Grade 7, Team A
             Social Studies Teacher and Science Teacher

Science

Scale Responses	5	4	3	2	1	Σ Row
5	2					2
4	6					6
3	5					5
2			2			2
1						0
Σ Column	13	1	2	0	0	15

Social Studies

Marginal Agreement = 1/5 (2/13+2/5) = .55/5 = .11

Table D5:   Observer Agreement from Grade 7, Team A
             Social Studies Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	1	1				2
4	1	6				7
3	3	1	1			5
2			2			2
1						0
Σ Column	5	8	3	0	0	15

Marginal Agreement = 1/5 (2/5+7/8+3/5) = 1.88/5 =. 38

Table D6:   Observer Agreement from Grade 7, Team A
              Science Teacher and Math Teacher

Math

	Science					
Scale Responses	5	4	3	2	1	Σ Row
5	5	7	1			13
4		1				1
3			2			2
2						0
1						0
Σ Column	5	8	3	0	0	16

Marginal Agreement = 1/5 (5/13+1/8+2/3) = 1.18/5 = .24

Table D7:   Observer Agreement from Grade 7, Team B
              English Language Arts Teacher and Social Studies Teacher

Social Studies

Scale Responses	5	4	3	2	1	Σ Row
5		3	2		1	5
4		6	3			9
3						0
2					1	1
1						0
Σ Column	0	8	5	0	1	15

Marginal Agreement = 1/5 (8/9) = .89/5 = .18

Table D8:   Observer Agreement from Grade 7, Team B
              English Language Arts Teacher and Science Teacher

Science

Scale Responses	5	4	3	2	1	Σ Row
5	1	2	3			6
4	1	6	1	1		9
3						0
2					2	2
1						0
Σ Column	2	8	4	1	2	17

English Language Arts

Marginal Agreement = 1/5 (2/6+8/9+1/2) = 1.72/5 = .34

Table D9:   Observer Agreement from Grade 7, Team B
               English Language Arts Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	4	1	1			6
4	5	1	3			9
3						0
2			1	1		2
1						0
Σ Column	9	2	5	1	0	17

English Language Arts

Marginal Agreement = 1/5 (6/9+2/9+1/2) = 1.39/5 = .28

Table D10: Observer Agreement from Grade 7, Team B
Social Studies Teacher and Science Teacher

Science

Scale Responses	5	4	3	2	1	Σ Row
5						0
4	1	6	2			9
3	1	2	1	1		5
2						0
1					1	1
Σ Column	2	8	3	1	1	15

Social Studies

Marginal Agreement = 1/5(8/9+3/5+1) = 2.49/5 = .50

Table D11:   Observer Agreement from Grade 7, Team B
              Social Studies Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5						0
4	6	1	2			9
3	2	1	2			5
2						0
1			1			1
Σ Column	8	2	5	0	0	15

Social Studies

Marginal Agreement = 1/5 (2/9+5/5) = 1.22/5 = .24

Table D12: Observer Agreement from Grade 7, Team B
Science Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	2					2
4	3	2	3			8
3	4					4
2			1			1
1			1	1		2
Σ Column	9	2	5	1	0	17

Marginal Agreement = 1/5 (2/9+2/8+4/5+1/1) = 2.27/5 = .45

Table D13: Observer Agreement from Grade 7, Team C
            English Language Arts Teacher and Social Studies Teacher

Social Studies

Scale Responses	5	4	3	2	1	Σ Row
5	3	2				5
4	5	3				8
3	1			2		3
2						0
1						0
Σ Column	9	5	0	2	0	16

English Language Arts

Marginal Agreement = 1/5 (5/9+5/8) = 1.19/5 = .24

Table D14:   Observer Agreement from Grade 7, Team C
English Language Arts Teacher and Science Teacher

Science

Scale Responses	5	4	3	2	1	Σ Row
5	4		1			5
4	7	2				9
3	1	1	1			3
2						0
1						0
Σ Column	12	3	2	0	0	17

Marginal Agreement = 1/5 (5/12+3/9+2/3) = 1.42/5 = .28

Table D15:   Observer Agreement from Grade 7, Team C
             English Language Arts Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	2	3				5
4	1	7	1			9
3		2		1		3
2						0
1						0
Σ Column	3	12	1	1	0	17

English Language Arts

Marginal Agreement = 1/5 (3/5+9/12+1/3) = 1.68/5 = .34

Table D16:   Observer Agreement from Grade 7, Team C
              Social Studies Teacher and Science Teacher

Science

Scale Responses	5	4	3	2	1	Σ Row
5	6	3				9
4	4		1			5
3						0
2	1		1			2
1						0
Σ Column	11	3	2	0	0	16

Marginal Agreement = 1/5 (9/11+3/5) = 1.42/5 = .28

Table D17:   Observer Agreement from Grade 7, Team C
                Social Studies Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	3	8	1			12
4		3				3
3		1		1		2
2						0
1						0
Σ Column	3	11	1	1	0	16

Social Studies

Marginal Agreement = 1/5 (3/9+5/11+1/2) = 1.28/5 = .26

Table D18:   Observer Agreement from Grade 7, Team C
              Science Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	2	2	4			8
4		4	1			5
3				2		2
2						0
1						0
Σ Column	2	6	5	2	0	15

Science

Marginal Agreement = 1/5 (3/12+3/12+1/2) = 1/5 = .20

APPENDIX E

GRADE 8 CONTINGENCY TABLES

Table E1:   Observer Agreement from Grade 8, Team A
               English Language Arts Teacher and Social Studies Teacher

Social Studies

Scale Responses	5	4	3	2	1	Σ Row
5	2					2
4	6	3				9
3		3				3
2	1					1
1		1	1			2
Σ Column	9	7	1	0	0	17

English Language Arts

Marginal Agreement = 1/5 (2/7+8/9+2/3) = 1.85/5 = .37

Table E2:   Observer Agreement from Grade 8, Team A
              English Language Arts Teacher and Science Teacher

Science

Scale Responses	5	4	3	2	1	Σ Row
5	2					2
4	6	3				9
3		3				3
2	1					1
1		1	1			2
Σ Column	9	7	1	0	0	17

English Language Arts

Marginal Agreement = 1/5 (2/9+7/9+1/3) = 1.33/5 = .27

Table E3:   Observer Agreement from Grade 8, Team A
             English Language Arts Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	2					2
4	7	2				9
3	2	1				3
2		1				1
1				2		2
Σ Column	11	4	0	2	0	17

English Language Arts

Marginal Agreement = 1/5 (2/11+4/9+1/2) = 1.12/5 = .22

Table E4:   Observer Agreement from Grade 8, Team A
              Social Studies Teacher and Science Teacher

Science

Scale Responses	5	4	3	2	1	Σ Row
5	5	2				7
4	4	4				8
3		1	1			2
2						0
1						0
Σ Column	9	7	1	0	0	17

Social Studies

Marginal Agreement = 1/5 (7/9+7/8+1/2) = 2.16/5 = .43

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Table E5:   Observer Agreement from Grade 8, Team A
             Social Studies Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	4	2		1		7
4	6	2				8
3	1			1		2
2						0
1						0
Σ Column	11	4	0	2	0	17

Social Studies

Marginal Agreement = 1/5 (7/11+4/8) = 1.14/5 = .23

Table E6: Observer Agreement from Grade 8, Team A
Science Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	7	2				9
4	4	2		1		7
3				1		1
2						0
1						0
Σ Column	11	4	0	2	0	17

Science

Marginal Agreement = 1/5 (9/11+4/7) = 1.39/5 = .28

Table E7:   Observer Agreement from Grade 8, Team B
             English Language Arts Teacher and Social Studies Teacher

Social Studies

Scale Responses	5	4	3	2	1	Σ Row
5	3	9				12
4		3				3
3						0
2				1		1
1						0
Σ Column	3	12	0	1	0	16

English Language Arts

Marginal Agreement = 1/5 (3/12+3/12+1/1) = 1.5/5 = .30

Table E8:   Observer Agreement from Grade 8, Team B
             English Language Arts Teacher and Science Teacher

Science

Scale Responses	5	4	3	2	1	Σ Row
5	5	5	2			12
4		2	1			3
3						0
2				1		1
1						0
Σ Column	5	7	3	1	0	16

English Language Arts

Marginal Agreement = 1/5 (5/12+3/7+1/1) = 1.85/5 = .37

Table E9:   Observer Agreement from Grade 8, Team B
             English Language Arts Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	7	2	3			12
4	1	1	1			3
3						0
2				1		1
1						0
Σ Column	8	3	4	1	0	16

English Language Arts

Marginal Agreement = 1/5 (8/12+3/3+1/1) = 2.67/5 = .53

Table E10:   Observer Agreement from Grade 8, Team B
              Social Studies Teacher and Science Teacher

Science

Scale Responses	5	4	3	2	1	Σ Row
5	2	1				3
4	3	6	3			12
3						0
2			1	1		2
1						0
Σ Column	5	7	4	1	0	17

Social Studies

Marginal Agreement = 1/5 (3/5+7/12+1/2) = 1.68/5 = .34

Table E11:   Observer Agreement from Grade 8, Team B
                Social Studies Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	2		1			3
4	6	3	3			12
3						0
2			1	1		2
1						0
Σ Column	8	3	5	1	0	17

Social Studies

Marginal Agreement = 1/5 (3/8+3/12+1/2) = 1.13/5 = .23

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Table E12:　Observer Agreement from Grade 8, Team B
Science Teacher and Math Teacher

Math

Scale Responses	5	4	3	2	1	Σ Row
5	3	1	1			5
4	5	2				7
3			4			4
2				1		1
1						0
Σ Column	8	3	5	1	0	17

Marginal Agreement = 1/5 (5/8+3/7+4/5+1/1) = 2.86/5 = .57

Table E13:   Observer Agreement from Grade 8, Team C
              English Language Arts Teacher and Social Studies Teacher

Social Studies

Scale Responses	5	4	3	2	1	Σ Row
5	9	4				13
4	1	1				2
3			2			2
2						0
1						0
Σ Column	10	5	2	0	0	17

English Language Arts

Marginal Agreement = 1/5 (10/13+2/5+2/2) = 2.17/5 = .43

Table E14:   Observer Agreement from Grade 8, Team C
              English Language Arts Teacher and Science Teacher

Science

Scale Responses	5	4	3	2	1	Σ Row
5	2	10	1			13
4		1	1			2
3			2			2
2						0
1						0
Σ Column	2	11	4	0	0	17

English Language Arts

Marginal Agreement = 1/5 (2/17+2/11+2/4) = .83/5 = .17

Table E15:   Observer Agreement from Grade 8, Team C
               Social Studies Teacher and Science Teacher

Science

Scale Responses	5	4	3	2	1	Σ Row
5	1	8	1			10
4	1	3	1			5
3			2			2
2						0
1						0
Σ Column	2	11	4	0	0	17

Marginal Agreement = 1/5 (2/5+5/11+2/4) = 1.15/5 = .23

APPENDIX F

GRADE 7 TEAM COMPARISONS BY SUBJECT AREA

Table F1:   Observer Agreement from Grade 7, Team A, English Language Arts Teacher
and Grade 7, Team B, English Language Arts Teacher

Team B

Scale Responses	5	4	3	2	1	Σ Row
5	4	5				9
4	1	4				5
3				2		2
2						0
1						0
Σ Column	5	9	0	2	0	16

Team A

Marginal Agreement = 1/5 (5/9+5/9) = 1.12/5 =.22

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Table F2:   Observer Agreement from Grade 7, Team A, English Language Arts Teacher
             and Grade 7, Team C, English Language Arts Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5	5	3	1			9
4		5				5
3			2			2
2						0
1						0
Σ Column	5	8	3	0	0	16

Marginal Agreement = 1/5 (5/9+5/8+2/3) = 1.86/5 = .37

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Table F3:   Observer Agreement from Grade 7, Team B, English Language Arts Teacher
             and Grade 7, Team C, English Language Arts Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5	3	3				6
4	2	6	1			9
3						0
2			2			2
1						0
Σ Column	5	9	3	0	0	17

Team B

Marginal Agreement = 1/5 (5/6+9/9) = 1.83/5 = .37

Table F4:   Observer Agreement from Grade 7, Team A, Social Studies Teacher
             and Grade 7, Team B, Social Studies Teacher

Team B

Scale Responses	5	4	3	2	1	Σ Row
5		2				2
4		4	3			7
3		2	2			4
2					1	1
1						0
Σ Column	0	8	5	0	1	14

Marginal Agreement = 1/5 (.88+.80) = 1.68/5 = .34

Table F5:   Observer Agreement from Grade 7, Team A, Social Studies Teacher
             and Grade 7, Team C, Social Studies Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5	2					2
4	5	2				7
3	2	3				5
2				2		2
1						0
Σ Column	9	5	0	2	0	16

Team A

Marginal Agreement = 1/5 (2/9+5/7+2/2) = 1.93/5 = .39

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Table F6:   Observer Agreement from Grade 7, Team B, Social Studies Teacher
             and Grade 7, Team C, Social Studies Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5						0
4	7	2				9
3	2	3				5
2						0
1				1		1
Σ Column	9	5	0	1	0	15

Team B

Marginal Agreement = 1/5 (5/9) = .56/5 = .11

Table F7: Observer Agreement from Grade 7, Team A, Science Teacher
and Grade 7, Team B, Science Teacher

Team B

Scale Responses	5	4	3	2	1	Σ Row
5	2	7	3	1		13
4		1				1
3					2	2
2						0
1						0
Σ Column	2	8	3	1	2	16

Marginal Agreement = 1/5 (2/13+1/8+2/3) = .95/5 = .19

Table F8:   Observer Agreement from Grade 7, Team A, Science Teacher
             and Grade 7, Team C, Science Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5	11	2				13
4			1			1
3	1		1			2
2						0
1						0
Σ Column	12	2	2	0	0	16

Team A

Marginal Agreement = 1/5 (12/13+1/2+2/2) = 2.42/5 = .48

Table F9:   Observer Agreement from Grade 7, Team B, Science Teacher
             and Grade 7, Team C, Science Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5	2					2
4	6	1	1			8
3	2	2				4
2	1					1
1	1		1			2
Σ Column	12	3	2	0	0	17

Team B

Marginal Agreement = 1/5 (2/12+3/8+2/4) = 1.05/5 = .21

Table F10:   Observer Agreement from Grade 7, Team A, Math Teacher
              and Grade 7, Team B, Math Teacher

Team B

Scale Responses	5	4	3	2	1	Σ Row
5	3	1	1			5
4	5	1	2	1		9
3	1		1	1		3
2						0
1						0
Σ Column	9	2	4	2	0	17

Team A

Marginal Agreement = 1/5 (5/9+2/9+3/4) = 1.53/5 = .31

Table F11:   Observer Agreement from Grade 7, Team A, Math Teacher
              and Grade 7, Team C, Math Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5	3	2				5
4		9				9
3		1	1	1		3
2						0
1						0
Σ Column	3	12	1	1	0	17

Team A

Marginal Agreement = 1/5 (3/5+9/12+1/3) = 1.68/5 = .34

Table F12:   Observer Agreement from Grade 7, Team B, Math Teacher
              and Grade 7, Team C, Math Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5	2	6	1			9
4		2				2
3	1	2		1		4
2		2				2
1						0
Σ Column	3	12	1	1	0	17

Marginal Agreement = 1/5 (3/9+2/12+1/4+1/2) = 1.25/5 = .25

APPENDIX G

GRADE 8 TEAM COMPARISONS BY SUBJECT AREA

Table G1: Observer Agreement from Grade 8, Team A, English Language Arts Teacher
and Grade 8, Team B, English Language Arts Teacher

Team B

Scale Responses	5	4	3	2	1	Σ Row
5	2					2
4	8	1				9
3	2	1				3
2		1				1
1				1		1
Σ Column	12	3	0	1	0	16

Marginal Agreement = 1/5 (2/12+3/9+1/1) = 1.50/5 = .30

Table G2:   Observer Agreement from Grade 8, Team A, English Language Arts Teacher
            and Grade 8, Team C, English Language Arts Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5	2					2
4	7	2				9
3	3					3
2	1					1
1			2			2
Σ Column	13	2	2	0	0	17

Marginal Agreement = 1/5 (2/13+2/9+2/3) = 1.04/5 = .21

Table G3: Observer Agreement from Grade 8, Team B, English Language Arts Teacher and Grade 8, Team C, English Language Arts Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5	10	2				12
4	3					3
3						0
2			1			1
1						0
Σ Column	13	2	1	0	0	16

Team B

Marginal Agreement = 1/5 (12/13+2/3) = 1.59/5 = .32

Table G4:   Observer Agreement from Grade 8, Team A, Social Studies Teacher
and Grade 8, Team B, Social Studies Teacher

Team B

Scale Responses	5	4	3	2	1	Σ Row
5	1	5		1		7
4	2	6				8
3		1		1		2
2						0
1						0
Σ Column	3	12	0	2	0	17

Team A

Marginal Agreement = 1/5 (3/7+8/12) = 1.10/5 = .22

Table G5:   Observer Agreement from Grade 8, Team A, Social Studies Teacher and Grade 8, Team C, Social Studies Teacher

Team C

Team A

Scale Responses	5	4	3	2	1	Σ Row
5	4	2	1			7
4	5	3				8
3	1		1			2
2						0
1						0
Σ Column	10	5	2	0	0	17

Marginal Agreement = 1/5 (7/10+5/8+2/2) = 2.33/5 = .47

Table G6:   Observer Agreement from Grade 8, Team B, Social Studies Teacher
              and Grade 8, Team C, Social Studies Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5	3					3
4	7	5				12
3						0
2			2			2
1						0
Σ Column	10	5	2	0	0	17

Team B

Marginal Agreement = 1/5 (3/10+5/12) = .72/5 = .14

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Table G7:   Observer Agreement from Grade 8, Team A, Science Teacher
             and Grade 8, Team B, Science Teacher

Team B

Scale Responses	5	4	3	2	1	Σ Row
5	3	5	1			9
4	2	2	3			7
3				1		1
2						0
1						0
Σ Column	5	7	4	1	0	17

Team A

Marginal Agreement = 1/5 (5/9+7/7+1/4) = 1.81/5 = .36

Table G8:   Observer Agreement from Grade 8, Team A, Science Teacher
              and Grade 8, Team C, Science Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5	1	8				9
4	1	3	3			7
3			1			1
2						0
1						0
Σ Column	2	11	4	0	0	17

Team A

Marginal Agreement = 1/5 (2/9+7/11+1/4) = 1.11/5 = 22

Table G9:   Observer Agreement from Grade 8, Team B, Science Teacher
              and Grade 8, Team C, Science Teacher

Team C

Scale Responses	5	4	3	2	1	Σ Row
5		4	1			5
4	2	4	1			7
3		3	1			4
2			1			1
1						0
Σ Column	2	11	4	0	0	17

Marginal Agreement = 1/5 (2/5+7/11+4/4) = 2.04/5 = .41

Table G10:   Observer Agreement from Grade 8, Team A, Math Teacher
               and Grade 8, Team B, Math Teacher

Team B

Scale Responses	5	4	3	2	1	Σ Row
5	6	1	4			11
4	2	2				4
3						0
2			1	1		2
1						0
Σ Column	8	3	5	1	0	17

Marginal Agreement = 1/5 (8/11+3/4+1/2) = 1.98/5 = .40

APPENDIX H

GRADE 7 AND 8 TEAM COMPARISONS BY SUBJECT AREA

Table H1:   Data Entry Sheet for Grade 7 Team A and Grade 8 Team A English Language Arts Teachers

	1a	1b		2a	2b	2c		3a	3b	3c	3d	3e		4a	4b		5a	5b	5c	5d	5e
Grade 7, Team A English Language Arts	5	5		5	5	5		4	5	NR	4	4		3	3		5	5	5	4	4
Grade 8, Team A English Language Arts	3	3		2	4	4		3	5	4	4	4		1	1		5	4	4	4	4

Table H2: Observer Agreement for Grade 7, Team A, English Language Arts and Grade 8, Team A, English Language Arts

Grade 8

Scale Responses	5	4	3	2	1	Σ Row
5	2	4	2	1		9
4		4	1			5
3				2		2
2						0
1						0
Σ Column	2	8	3	1	2	16

Grade 7

Marginal Agreement = 1/5 (2/9+5/8+2/3) = 1.52/5 = .29

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Table H3:   Data Entry Sheet for Grade 7 Team A and Grade 8 Team A Social Studies Teachers

	1a	1b		2a	2b	2c		3a	3b	3c	3d	3e		4a	4b		5a	5b	5c	5d	5e
Grade 7, Team A Social Studies	3	NR		3	5	5		3	4	4	4	4		2	2		3	3	4	4	4
Grade 8, Team A Social Studies	4	3		4	4	4		4	5	5	5	5		3	5		5	4	5	4	4

Table H4: Observer Agreement for Grade 7, Team A, Social Studies and Grade 8, Team A, Social Studies

Grade 8

Scale Responses	5	4	3	2	1	Σ Row
5		2				2
4	5	2				7
3	1	4				5
2	1		1			2
1						0
Σ Column	7	8	1	0	0	16

(left label: Grade 7)

Marginal Agreement = 1/5 (2/7+7/8+1/5) = 1.37/5 = .27

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Table H5:   Data Entry Sheet for Grade 7 Team A and Grade 8 Team A Science Teachers

	1a	1b		2a	2b	2c		3a	3b	3c	3d	3e		4a	4b		5a	5b	5c	5d	5e
Grade 7, Team A Science	5	4		5	5	5		5	5	NR	5	5		3	3		5	5	5	5	5
Grade 8, Team A Science	4	4		5	5	5		4	5	5	5	4		3	4		5	5	5	4	4

Table H6: Observer Agreement for Grade 7, Team A, Science and Grade 8, Team A, Science

Grade 8

Scale Responses	5	4	3	2	1	Σ Row
5	8	5				13
4		1				1
3		1	1			2
2						0
1						0
Σ Column	8	7	1	0	0	16

(Grade 7 labels the rows)

Marginal Agreement = 1/5 (8/13+1/7+1/2) = .84/5 = .17

Table H7:   Data Entry Sheet for Grade 7 Team A and Grade 8 Team A, Math Teachers

	1a	1b		2a	2b	2c		3a	3b	3c	3d	3e		4a	4b		5a	5b	5c	5d	5e
Grade 7, Team A Math	4	4		3	5	4		5	4	4	4	4		3	3		5	5	5	4	4
Grade 8, Team A Math	4	5		4	5	5		5	5	4	5	4		2	2		5	5	5	5	5

Table H8: Observer Agreement for Grade 7, Team A, Math and Grade 8, Team A, Math

Grade 8

Scale Responses	5	4	3	2	1	Σ Row
5	5					5
4	7	3				9
3		1		2		3
2						0
1						0
Σ Column	12	3	0	2	0	17

Marginal Agreement = 1/5 (5/12+3/9) = .75/5 = .15

Table H9: Data Entry Sheet for Grade 7 Team B and Grade 8 Team B English Language Arts Teachers

	1a	1b		2a	2b	2c		3a	3b	3c	3d	3e		4a	4b		5a	5b	5c	5d	5e
Grade 7, Team B English Language Arts	4	5		4	5	4		4	4	5	5	4		2	2		5	5	4	4	4
Grade 8, Team B English Language Arts	5	4		4	5	5		5	5	5	5	4		2	NR		5	5	5	5	5

Table H10: Observer Agreement for Grade 7, Team B, English Language Arts and Grade 8, Team B, English Language Arts

Grade 8

Scale Responses	5	4	3	2	1	Σ Row
5	5	1				6
4	7	2				9
3						0
2				1		2
1						0
Σ Column	12	3	0	1	0	17

Grade 7

Marginal Agreement = 1/5 (6/12+3/9+1/2) = 1.33/5 = .27

Table H11:   Data Entry Sheet for Grade 7 Team B and Grade 8 Team B Social Studies
              Teachers

	1a	1b		2a	2b	2c		3a	3b	3c	3d	3e		4a	4b		5a	5b	5c	5d	5e
Grade 7, Team B Social Studies	4	4		4	4	4		3	3	4	3	4		1	NR		0	3	4	3	4
Grade 8, Team B Social Studies	4	4		4	5	5		4	4	4	4	4		2	2		4	4	5	4	4

Table H12: Observer Agreement for Grade 7, Team B, Social Studies and Grade 8, Team B, Social Studies

Grade 8

Scale Responses	5	4	3	2	1	Σ Row
5						0
4	3	6				9
3		5				5
2						0
1				1		1
Σ Column	3	12	0	1	0	15

(Grade 7, left side label)

Marginal Agreement = 1/5 (9/12) = .75/5 = .15

Table H13:   Data Entry Sheet for Grade 7 Team B and Grade 8 Team B Science Teachers

	1a	1b		2a	2b	2c		3a	3b	3c	3d	3e		4a	4b		5a	5b	5c	5d	5e
Grade 7, Team B Science	4	4		4	5	4		4	5	3	3	3		1	1		3	4	4	2	4
Grade 8, Team B Science	4	3		4	4	5		3	4	5	4	4		2	3		4	3	5	5	5

Table H14: Observer Agreement for Grade 7, Team B, Science and Grade 8, Team B, Science

Grade 8

Scale Responses	5	4	3	2	1	Σ Row
5		2				2
4	3	2	3			8
3	1	3				4
2	1					1
1			1	1		2
Σ Column	5	7	4	1	0	17

(Grade 7 — vertical axis label on left)

Marginal Agreement = 1/5 (2/5+7/8+4/4+1/1) = 3.28/5 = .66

Table H15:   Data Entry Sheet for Grade 7 Team B and Grade 8 Team B Math Teachers

	1a	1b		2a	2b	2c		3a	3b	3c	3d	3e		4a	4b		5a	5b	5c	5d	5e
Grade 7, Team B Math	4	3		5	5	5		3	5	5	5	5		3	2		5	4	5	3	3
Grade 8, Team B Math	4	3		4	5	5		3	5	5	5	5		2	3		5	3	3	4	5

Table H16: Observer Agreement for Grade 7, Team B, Math and Grade 8, Team B, Math

Grade 8

Scale Responses	5	4	3	2	1	Σ Row
5	7		2			9
4		1	1			2
3	1	1	2	1		5
2			1			1
1						0
Σ Column	8	2	6	1	0	17

Grade 7

Marginal Agreement = 1/5 (8/9+2/2+5/6+1/1) = 3.72/5 = .74

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Table H17: Data Entry Sheet for Grade 7 Team C and Grade 8 Team C English Language Arts Teachers

	1a	1b		2a	2b	2c		3a	3b	3c	3d	3e		4a	4b		5a	5b	5c	5d	5e
Grade 7, Team C English Language Arts	3	5		4	5	4		4	5	4	4	4		3	3		5	4	5	4	4
Grade 8, Team C English Language Arts	5	5		5	5	5		5	5	4	5	5		3	3		5	5	5	4	5

Table H18: Grade 7, Team C, English Language Arts and Grade 8, Team C, English Language Arts

Grade 8

Scale Responses	5	4	3	2	1	Σ Row
5	5					5
4	7	2				9
3	1		2			3
2						0
1						0
Σ Column	13	2	2	0	0	17

Grade 7

Marginal Agreement = 1/5 (5/13+2/9+2/3) = 1.27/5 = .25

Table H19:   Data Entry Sheet for Grade 7 Team C and Grade 8 Team C Social Studies
              Teachers

	1a	1b		2a	2b	2c		3a	3b	3c	3d	3e		4a	4b		5a	5b	5c	5d	5e
Grade 7, Team C Social Studies	5	4		5	5	5		4	5	5	5	5		2	2		4	4	5	4	4
Grade 8, Team C Social Studies	5	5		5	5	5		4	4	5	5	5		3	3		4	5	5	4	4

Table H20:   Observer Agreement for Grade 7, Team C, Social Studies and Grade 8, Team C,
              Social Studies

Grade 8

Scale Responses	5	4	3	2	1	Σ Row
5	8	1				9
4	2	4				6
3						0
2			2			2
1						0
Σ Column	10	5	2	0	0	17

Grade 7

Marginal Agreement = 1/5 (9/10+5/6) = 1.73/5 = .35

Table H21: Data Entry Sheet for Grade 7 Team C and Grade 8 Team C Science Teachers

	1a	1b		2a	2b	2c		3a	3b	3c	3d	3e		4a	4b		5a	5b	5c	5d	5e
Grade 7, Team C Science	4	3		5	5	5		5	5	4	5	4		3	5		5	5	5	5	5
Grade 8, Team C Science	3	4		4	4	4		4	5	4	4	5		3	3		4	4	4	3	4

Table H22: Observer Agreement for Grade 7, Team C, Science and Grade 8, Team C, Science

Grade 8

Scale Responses	5	4	3	2	1	Σ Row
5	1	9	2			12
4	1	1	1			3
3		1	1			2
2						0
1						0
Σ Column	2	11	4	0	0	17

Grade 7

Marginal Agreement = 1/5 (2/12+3/11+2/4) = .94/5 = .19

APPENDIX I

DISTRIBUTION OF GRADE 7 AND 8

SURVEY RESPONSE DISTRIBUTION BY SUBJECT AREA

Table I1: Observer Responses from Grade 7, English Language Arts Teachers
Grade 7 Summary of English Language Arts Survey Scores

Score	5	4	3	2	1
Team A	9	5	2	0	0
Team B	6	9	0	2	0
Team C	5	9	3	0	0

Table I2: Observer Responses for Grade 7, Social Studies Teachers
Grade 7 Summary of Social Studies Survey Scores

Score	5	4	3	2	1
Team A	2	7	5	2	0
Team B	0	9	5	0	1
Team C	9	5	0	2	0

Table I3: Observer Responses for Grade 7, Science Teachers
Grade 7 Summary of Science Survey Scores

Score	5	4	3	2	1
Team A	13	1	2	0	0
Team B	2	8	4	1	2
Team C	12	3	2	0	0

Table I4: Observer Responses for Grade 7, Math Teachers
Grade 7 Summary of Math Survey Scores

Score	5	4	3	2	1
Team A	5	9	3	0	0
Team B	9	2	5	1	0
Team C	3	12	1	1	0

Table I5: Observer Responses for Grade 8 English Language Arts Teachers
Grade 8 Summary of English Language Arts Survey Scores

Score	5	4	3	2	1
Team A	2	9	3	1	2
Team B	12	3	0	1	0
Team C	13	2	2	0	0

Table I6: Observer Responses for Grade 8 Social Studies Teachers
Grade 8 Summary of Social Studies Survey Scores

Score	5	4	3	2	1
Team A	7	8	2	0	0
Team B	3	12	0	2	0
Team C	10	5	2	0	0

Table I7: Observer Responses for Grade 8 Science Teachers
Grade 8 Summary of Science Survey Scores

Score	5	4	3	2	1
Team A	9	7	1	0	0
Team B	5	7	4	1	0
Team C	2	11	4	0	0

Table I8: Observer Responses for Grade 8 Math Teachers
Grade 8 Summary of Math Survey Scores

Score	5	4	3	2	1
Team A	11	4	0	2	0
Team B	8	3	5	1	0
Team C					

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