Collaborative Practitioner Inquiry:
Providing Leadership and Action Research for Teacher Professional Development

by

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ABSTRACT

Professional development is best when embedded in one’s practice and linked directly to the classroom. Opportunities for teachers to identify specific areas of concern in their classroom and problem solve solutions via action research promotes a culture of inquiry. This culture of inquiry is enhanced when teams of teachers collaborate and share their action research experiences.

In this study, action research training was provided to teachers to create a trained cohort of action research teachers within the school. Members of this cohort voluntarily joined with other teachers interested in classroom action research and participated in a professional learning community (PLC). The members of this PLC initiated classroom action research projects and met collaboratively as a PLC. The study examined what collaborative practitioner inquiry contributed to teacher professional development and how my leadership contributed to teacher professional development. Data were collected through the administration of a survey, interviews, transcriptions of PLC meetings, and my research journal.

Findings indicate that participants benefited from the provided professional development and my leadership as a result of the intervention. Teachers applied the professional literature and used data to inform their instruction. Teacher collaboration was enhanced and teachers examined instructional practices. Lastly, my leadership enhanced teacher application of action research.
DEDICATION

This dissertation is dedicated to my wife, Romelle, and my children, Rachel, Nicholas, and Nathan, for their love and understanding as I completed this dissertation. Also, this is dedicated to my mom and dad for the importance they placed on my education.
ACKNOWLEDGEMENTS

I want to thank Dr. Allen and Dr. Cheatham for their guidance and support. I want to extend a special thanks to Dr. Moore, a wonderful teacher, for his advice and wisdom as I completed this endeavor. Additionally, I want to thank my mentors, Dr. Kriekard and Dr. Weimer, for providing me leadership opportunities and for challenging and encouraging me to pursue excellence as an instructional leader. Lastly, I want to thank the teachers that participated in my study for their openness to new ideas. I am very proud of you all and I appreciate your assistance with my professional inquiry and growth.
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Chapter 1  Leadership Context and Purpose of Action

“In the feeling, however dim, that the facts which directly meet the senses are not the whole story, that there is more behind them and more to come from them, lies the germ of intellectual curiosity” (Dewey, 1910/2005, p. 28).

I believe that exploring one’s intellectual curiosity is the hallmark of learning. Throughout my educational career as a classroom teacher and building principal, it has been my belief that there is always more that we educators can learn about our practice and ourselves via a culture of inquiry.

I have been curious about professional development for many years. Often, professional development for teachers consists of choosing from among limited trainings presented by district professional development departments, the attendance of conferences, or the completion of coursework offered by universities. Such options may not lend themselves to the context of individual teachers’ classrooms or the individual needs of practitioners. Professional development is effective when teachers link what they have learned to the classroom (Darling-Hammond & Richardson, 2009). The most effective professional development occurs in the context of the classroom so that the actions of the teacher are embedded in the day-to-day culture of the school and focus on continuous improvement (Elmore, 2004; Fullan, 2007). Such
professional development requires the location of the teachers’ learning to be as close as possible to where their teaching occurs.

**Context**

I have finished my fifth year to date as principal of Desert Sands High School, a large, suburban high school in Phoenix, Arizona. Throughout my administration, the teachers of this school have participated in a group performance-based-pay program in which they choose to participate within a particular professional learning community (PLC) (DuFour, 2004; DuFour & Eaker, 1998). The PLC options at the school are organic in nature and are evaluated annually by a teacher committee for their impact upon instructional practice and student achievement. PLCs at the school include ones devoted to peer observation, technology integration, action research, student intervention teams, professional literature review, teacher mentoring, and Advancement Via Individual Determination (AVID). Participants in all PLCs are responsible for meeting defined expectations of the PLC that include regular meetings for the purpose of shared reflection. The teachers of this school seem to understand the need for and benefit of professional development, but they do not seem cognizant of their own roles in its design. My curiosity relative to the PLCs pertains to how teachers can balance collaborative participation with individualized personal inquiry and professional development.

Much like creating individualized instruction for their students, I believe that teachers benefit from individualizing and directing their own learning for it to

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1 All local names are pseudonyms.
become relevant to the context of their classrooms and instruction. It is 
intellectual curiosity and action (Dewey, 1910/2005) that comprise the theoretical 
foundation of my core belief of how one thinks and learns. This belief is rooted in 
my own professional experience as a classroom social studies teacher. Eight years 
ago, as a participant in a career ladder program in a neighboring district, I 
completed my first classroom action research project within the context of a 
cross-curricular learning community. I found action research to be richly 
rewarding to my professional development and from the experience I gained the 
conviction to encourage classroom action research if ever I had the opportunity as 
an instructional leader. That opportunity came a little over two years ago, when as 
principal of Desert Sands, I was invited by the science department chair to join 
with the members of the department to examine test results and discuss methods 
to improve those scores. It was not by happenstance, but from my beliefs and 
experience that from this initial meeting of science teachers, classroom action 
research would be implemented at Desert Sands in order to address teacher 
professional development. Consequently, my own action research is focused on 
collaborative practitioner inquiry, professional development that occurs jointly 
within a community while becoming imbedded within teacher practice and 
applied and studied directly within the classroom.

Purpose

I want the teachers at Desert Sands to bring individualization and 
relevance to their professional growth by learning from their day-to-day activities 
and within the context of their classrooms. I proposed that the best manner to
achieve this kind of professional development is through the use of practitioner research within the classroom as well as professional learning communities. I wished to combine collaborative professional development through the use of PLCs with self-directed, individualized professional development through practitioner inquiry. I believe these approaches complement each other when appropriately guided by me as an instructional leader.

In brief, my goal was to enhance teacher professional development via teacher collaboration and reflective practice. The purpose of this study was to determine how I could lead faculty to collaborative practitioner inquiry by combining collaboration with self-directed inquiry. The following research questions guided this study:

1. What will collaborative practitioner inquiry contribute to teachers’ professional development at Desert Sands High School?
2. What will my leadership contribute to teachers’ professional development at Desert Sands High School?
Chapter 2 Review of Supporting Scholarship

This chapter presents four domains of scholarship that inform this study. The domains consist of action research, embedded professional development, professional learning communities, and the cycles of inquiry I conducted previously.

**Action Research**

Action research enables participants to examine their practice systematically. This form of research can serve many purposes. This section presents background on action research as a theoretical lens for this study as well as a practical application to education and to professional development.

**Theoretical lens.** Humans think by the continuous processes of inquiry and reflection. We have an intellectual curiosity that drives us to believe that, when experiencing phenomenon, our senses are not complete, that there is more. Dewey (1910/2005) states, “To maintain the state of doubt and to carry on systematic and protracted inquiry – these are the essentials of thinking” (p. 12). To think is to question and gather data so as to come to a conclusion and, in doing so, take a personal interest in the question. This is a pragmatic approach to how we think, for it is not that we possess knowledge, but that we take action applying it (Biesta & Burbules, 2003). We interact with our environment and create a reality that can be defined only by our actions; our created reality becomes
knowledge that informs our further actions and activities. This view of thought and action underlies action research.

Action research changes social organizations through “a circle of planning, executing, reconnaissance or fact-finding, for the purpose of evaluating the results” (Lewin, 1948/1951/1997, p. 146). As a leader of thought in the social sciences, Lewin examined the difficulty of a field that, in his beliefs, lacked objectivity for determining the success of social practice. He claimed that basic social research must include broad, descriptive fact-finding in regard to the evaluation of the social action implemented.

Triangulation of “action, research, and training” (Lewin, 1948/1951/1997, p. 149) must be maintained and balanced for the sake of purposeful action. A strong case can be made that the training of research teams is essential for the purpose of meaningful action research and social change. A lack of training is a significant hindrance to greater experimentation, but if training is undertaken, it may create a team of productive practitioners that can handle scientific problems as well as the management of intergroup relations.

**Application to education.** Within the social sciences and the field of education, action research can bridge the gap between traditional academic research and the daily experiences of practitioners for the purpose of meaningful change. There are differing methods of practitioner inquiry, all of which focus upon a deeper, richer understanding of how students learn (Cochran-Smith & Lytle, 2009). Practitioner inquiry is a conceptual label for a continuum of differing methods of inquiry and research, and classroom action research is a
unique form of inquiry unto itself. As a method of practitioner inquiry, the following definitions of action research are pertinent:

- “Action research is an approach to professional development and improved student learning in which teachers systematically reflect on their work and make changes in their practice” (Borgia & Schular, 1996, p. 1).
- “Action Research is a reflective, systematic inquiry that focuses on a relevant problem in teaching or learning for the purpose of enacting meaningful change to address that problem” (Brighton, 2009, p. 40).
- “A more formal definition of action research is continual disciplined inquiry conducted to inform and improve our practice as educators” (Calhoun, 2002, p. 18).
- “It is a collaborative approach to inquiry that seeks to build positive working relationships and productive communicative styles” (Stringer, 2007, p. 20).

From these definitions the commonalities of reflection, collaboration, and systematic inquiry for the purpose of problem solving and improved practices emerge. These commonalities indicate the promise of action research for meaningful professional development for teachers (Darling-Hammond & Richardson, 2009; Speck & Knipe, 2005).

**Application to professional development.** Supported, effective action research projects undertaken by teachers can serve as a framework of continuous, meaningful professional development (Levin & Rock, 2003). When effectively
conducted, action research has been shown to improve students’ learning as well as develop teachers as effective, reflective practitioners (Cardelle-Elawar, 1993; Ferrance, 2000; Nolen & Putten, 2007). Action research can affect teacher learning due to its connection of theory to practice (Zambo, 2007), and its positive effects on teacher efficacy and teacher learning can be extended from pre-service teachers (Zambo & Zambo, 2006) to proficient teachers (Levin & Rock, 2003). There are many uses for action research by teachers, all of which can be meaningful professional development and a viable resource for teacher changes to curriculum and instruction (Borgia & Schular, 1996; Ferrance, 2000).

Action research by teachers can be by individual design or address a common problem through a collaborative action research process (Stringer, 2007). When implemented, collaborative action research conducted by a team of teachers can be a meaningful experience for those individuals (Speck & Knipe, 2005). Teachers conducting collaborative action research will think about their practice when inquiry, reflection, and change become a larger part of their profession (Levin & Rock, 2003). Action research, when inspired and supported by an instructional leader, can be a vehicle for collaboration as teachers establish individual or collaborative goals and problem solve with one another for meaningful professional growth (Calhoun, 1993, 2002; Cardelle-Elawar, 1993).

**Embedded Professional Development**

Teachers’ learning and growth is a direct reflection of how meaningful professional development is to them (Darling-Hammond & Richardson, 2009). Professional development that is a cursory introduction does little to impact
practice and does not result in meaningful change; opportunities for teachers to process new skills thoroughly and in relevant contexts are crucial. Student success is improved when teachers are involved in not only the selection of professional development, but when they plan its design based upon a reflection of their individual needs (Speck & Knipe, 2005). Taking ownership of the individual design of one’s professional development takes on greater meaning when it is linked daily and has direct connection to the context of the individual’s classroom.

Embedded professional development, opportunities for growth that are linked directly to individuals’ classrooms, is imperative to teacher learning and change to teacher practices (Speck & Knipe, 2005). A multitude of individual or collaborative practices can serve as embedded professional development. They include study teams, action research, peer observation, peer coaching, mentoring, standards and curriculum development, planning lessons, and creating assessments. Such examples of teacher learning opportunities are linked to the classroom and relevant to the practitioner so that teachers are more committed to their professional development. Research indicates that professional development is effective when teacher learning becomes embedded in the day-today culture, when the physical location of the learning is as close as possible to where the teaching itself occurs, and the learning is linked directly to the classroom (Darling-Hammond & Richardson, 2009; Elmore, 2004, Fullan, 2007).
Professional Learning Communities

Interpersonal interaction promotes learning (Wenger 2008a). Learning is the acquisition of ideas and information, but the accumulation of ideas and information is of no use unless individuals put them in practice through interaction with others. Information alone has no value unless put in the “context of the social practices for the communities that give it cultural life” (Wenger, 1991, p. 3). Membership in communities is what gives life to information and membership in such communities creates opportunities for learning by providing individuals the forum to share information unique to their domain or practice (Wenger, 1991, 2008a, 2008b). This view of learning as a result of personal, human interactions within communities underlies the concept of PLCs.

PLCs within schools allow for the dismantling of industrial models of education to one that allows the school to operate as a learning organization (DuFour & Eaker, 1998). PLCs are organizational arrangements among administrators and faculty devoted to collegial professional development and school improvement. PLCs espouse collective inquiry and promote an orientation of action and experimentation (DuFour & Eaker, 1998). Research suggests that PLCs can improve teachers’ collaboration and result in a culture of collegiality (Vescio, Ross, & Adams, 2008; Gadja & Koliba, 2008; Hipp, Huffman, Pankake, & Olivier, 2008).

Researchers note that leadership is a vital component to the impact of PLCs on instructional practices and sustainability. Instructional leaders who
establish basic goals and outcomes among the members of the organization can
extend the commitment and satisfaction that collaborative work provides to
changes in teacher practices if that is clearly the focus (Elmore, 2004). The success
of the PLC relies heavily upon the leadership of the principal and the ability of the
principal to share authority, facilitate the work of staff, and participate without
dominating (Hord, 1977). When not properly implemented, PLCs may lose
momentum as an education reform, but sustainability can be enhanced when
leaders minimize barriers to success (Dufour, 2004).

**Previous Cycles of Inquiry**

I completed two cycles of inquiry prior to the study reported here. The
first study occurred during the fall 2008 semester. The second was initiated within
that same fall semester and concluded in the spring 2009 semester.

**Cycle one.** My first study examined the impact of a PLC on teacher
collegiality and instructional practice. The PLC I studied had spontaneously
emerged as a result of a common interest on the part of nine science department
faculty members to improve their students’ scores on standardized state tests.
The initial three meetings of this new PLC focused upon establishing group norms,
establishing leadership with the PLC, and identifying goals. I helped the PLC
interpret the results of the most recent Arizona Instrument to Measure Standards
(AIMS) Biology examination and suggestions were offered by members of the
team to improve the scores of future student cohorts taking the test. By the third
meeting of this PLC, membership narrowed to six members of the department and a focus of examining instructional practices was established. These members decided to continue for the remainder of the school year as a PLC and, at my suggestion, implemented an action research model to examine their individual and collective teaching practices.

Their classroom action research projects began in the latter part of the fall semester and concluded at the close of the spring semester. The PLC members agreed to share the progress and results of their action research study in four periodic meetings scheduled through the remainder of the school year. With the members’ consent, I was to continue as a co-facilitator and member of the PLC. Although my first cycle of inquiry was brief, for I transitioned soon to my second intervention of action research, informative data were gathered and conclusions made in regard to teacher interactions and instructional practices relative to PLCs.

Interviews of three participants selected from the PLC suggest that the learning strategies utilized in their practice were learned best when teachers interacted with one another. Additionally, a survey of all six PLC members in the study demonstrated that they sought opportunities to work collaboratively and believed that collaboration improved instruction. Lastly, interviews of the three participants substantiated positive changes in instructional practices. The participants often noted that participation in the PLC resulted in the implementation of shared instructional practices that were successful. One
participant in this initial study noted the need for an instructional leader to direct the PLC.

**Cycle two.** The purpose of my second study was to examine the effect of action research within the same science PLC to determine its impact on teacher practices and collegiality. Collaborative action research was an innovation new to the PLC collectively and to three of the six PLC members individually. The introduction of action research was selected as an intervention to foster a culture of research and teacher learning that would aid in a school goal of continuous teacher improvement. As co-facilitator of these meetings, I provided training to the PLC for the initiation and completion of individual classroom action research projects. Additionally, I facilitated the sharing of progress or concerns among the teachers relative to their individual action research projects. The PLC met four times during the remainder of the school year. The meetings were usually an hour in length and at each meeting teachers presented the progress of their projects to date.

Within the context of this science department Action Research PLC, results of the study suggest that action research was a powerful learning tool and impacted both instructional practices and collegiality. Teacher participation within the PLC and implementation of action research provided opportunities for PLC members to examine and share practices that were either effective or ineffective within their individual classrooms. The three participants I chose to interview in
the study had prior knowledge and experience using action research. As a result, their discussion in regard to what they had learned of action research in this specific context contained a foundation of knowledge that led to a rich dialog. These participants agreed that action research benefited their instruction and collaboration, but the implementation of future action research cycles could be enhanced with perhaps a collective research focus for the PLC and continued, subsequent cycles of research.

The results of the study suggest teacher implementation of problem identification, intervention, and evaluation of results created personalized, professional development opportunities unique to the teachers and related directly to their classrooms. Collegiality was the most pronounced pattern identified from the data. Not only were these teachers talking, but also they were having substantive conversations about their responsibilities and direct actions taken in response to a problem in their classrooms.

The teachers within this PLC acknowledged that action research could serve as a self-directed, personalized professional development tool. In regard to my co-facilitation of the PLC, I came to more profoundly understand from this study my need to provide continued teacher training, support, and time on the part of the teachers to be successful in completing action research projects. As an instructional leader, I determined that future cycles of research for this project would include institutionalizing action research to create sustainability to the
process. Also, I would continue to explore my impact as instructional leader and facilitator of collaborative action research within PLCs.

**Post study one and two.** In fall 2009 the Action Research PLC was approved by the school’s Faculty Advisory Committee (FAC) to continue for that school year and, at my suggestion, promote cross-curricular membership. The PLC consisted of six teachers. Two of the teachers had been members of the Action Research PLC since its inception in the fall of 2008, and four were new members that had no prior experience with action research. The PLC was not specific to the science department as in the past, but was cross-curricular in membership with the addition of a fine arts teacher and a special education teacher. I participated as a co-facilitator, but my facilitative role had diminished as one of the teachers that had participated for the second year had assumed a leadership role.
Chapter 3 Method

The following describes the method used for this action research project. It presents the setting, participants, action plan, and data sources and collection.

Setting

The site for this study was a suburban high school in a large metropolitan school district in Phoenix, Arizona. The school district’s forty-four schools deliver services to over thirty thousand students in grades kindergarten through twelve. The school district offers an extensive array of professional development courses through its professional development department. The district also places emphasis on the use of technology and has invested heavily in the distribution of laptops and equipment along with training and support for its use to both staff and students.

Desert Sands, the school in which I implemented my innovation, is a high school of approximately 1,730 students, 80 teachers, and 35 support staff. The school has been in existence for 35 years and serves a primarily White, middle class community. The largest minority population is Hispanic and constitutes approximately 20 percent of the total student population. Approximately eight percent of the total student population is receiving special education services.

Annual cohort (sophomore class) data from the Arizona Instrument to Measure Standards (AIMS) has been consistent in the testing areas of Writing, Reading, and Mathematics for the past five years. The percentage of students
within annual testing cohorts that meet or exceed the standard has been in the mid-to-low eighties with the exception of the area of writing that has periodically fluctuated into the low seventies. Based upon the Arizona Learns criteria, for the past five years the school has maintained a school profile of Excelling (Arizona Department of Education, 2010), the highest profile awarded from the Arizona State Department of Education. A total score comprised of three different scale point areas and a z-score determines Arizona Learns profiles. The three scale point areas include (a) a composite scale point from the test results among a sophomore test cohort and upper classmen in need of passing a test within the areas of reading, writing, and math, (b) a graduation and dropout scale score and (c) an English Language Learner scale score. A z-score is calculated to determine if a school meets a threshold for the percent of students in the exceeds-the-standards category on AIMS. Based upon total scale points and the z-score, a school may be awarded one of the following profiles: Underperforming, Performing, Performing Plus, Highly Performing, or Excelling (Arizona Department of Education, 2010).

To improve test scores and maintain the school label, the Desert Sands school action plan has included an emphasis upon teacher learning and use of research-based instructional strategies.

All teachers participate in a PLC as an expectation of the school’s group Performance-Based-Pay (PBP) plan. The Faculty Advisory Committee (FAC) reviews and evaluates PLC choices each fall and considers proposals for the
implementation of new PLCs and the renewal of existing ones. As implemented at Desert Sands, PLCs must fit the goals of the school’s action plan, demonstrate that they will lead to greater student achievement, and provide a focus on best practices. A menu of PLC choices is annually offered to all teachers and they are expected to participate and complete the expectations of one of the PLCs in order to receive group PBP compensation.

Previous PLC choices have included peer observation, technology integration, action research, student intervention teams, and professional literature review. Teacher leaders facilitate the PLC choices with the exception of the Action Research PLC that I have co-facilitated. As described in the previous chapter, my initial two cycles of research and associated interventions at the school were, first, the creation of a science department PLC and, second, the introduction and use of action research within that same PLC. The Action Research PLC continued last school year with the introduction of cross-curricular membership.

Participants

Due to the voluntary feature of PLC membership at Desert Sands, the composition of the study’s participants was uncertain at the beginning of the initiative. It turned out that a total of five participants were involved in this study.

The members of the Action Research PLC that I studied had varying degrees of both training and experience with the use of classroom action research. The PLC included a cohort of two teachers that had completed fifteen hours of
action research professional development that I presented in August 2010. These two PLC members had received the action research professional development, but had no previous experience in the Action Research PLC. Three other members of this PLC were experienced classroom researchers as they had been members of the school’s Action Research PLC in the previous one or two years, but did not participate in the Action Research professional development. All PLC members received either the action research professional development or had previous experience in the Action Research PLC (see Table 1).

Table 1

*Participant’s Professional Development and Membership Experience in the Action Research PLC*

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Action Research PLC Membership 2008-09</th>
<th>Action Research PLC Membership 2009-10</th>
<th>Received Professional Development August 2010 (Cohort)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mrs. Grey</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mrs. Red</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Mrs. Yellow</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Mrs. Blue</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Mrs. Teal</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Three teachers were selected from the Action Research PLC as a focal group of my study for purposes of data collection. The three members of my focal
group were Highly Qualified in their content areas using criteria from the No Child Left Behind Act of 2001 (n.d.) and collectively possessed a range of teaching and action research knowledge and experience. As the instructional leader of the school, I co-facilitated the Action Research PLC for the sharing of progress among the teachers relative to their individual action research projects. Also, I provided continued training of the PLC for teacher implementation and completion of individual classroom action research projects.

**Action Plan**

My innovation consisted of collaborative practitioner inquiry. I collaborated with an Action Research PLC of teachers in order to provide them richer and deeper understandings of practitioner inquiry. The trained cohort of teachers within the PLC were encouraged to continue their own classroom research as well as be utilized for the provision of action research training to other teachers at the school. Additionally, this PLC met to share the progress of their action research and look to colleagues for insights and assistance to have improved their individual classroom interventions. Important to the collaborative aspect of this study was the opportunity for the participating teachers to interact with one another. Communicating the progress of their inquiry was essential to a shared practice and as well as PLC and individual reflection. General steps of my action plan were as follows, with a detailed plan defined in Appendix A.
Beginning the week July 12, 2010 and weekly thereafter for a total of four weeks, I emailed (see Appendix B) professional literature regarding practitioner inquiry, action research, professional learning communities, and embedded professional development all teachers in the school.

During the week of August 2, 2010, I presented fifteen hours of professional development in the process of action research to a cohort of teachers from the school that voluntarily chose to receive the training. Included in this professional development was time and assistance for these teachers to identify an area of classroom research, initiate a literature review relevant to that area, and design their basic classroom research plan.

When all teachers reported to school the week of August 9, 2010 for required school site professional development, I introduced and explained to the teaching staff the concept of collaborative practitioner inquiry and how developing models of inquiry can be used as an effective method of embedded professional development.

During the month of September 2010, one member of the recently trained cohort of action research teachers presented to staff his action research project and the outcomes he hoped to gain from his individual classroom research during the course of the school year. The same month the Desert Sands FAC evaluated existing group PLCs (including the Action Research PLC) to assess their instructional impact and alignment with the school action plan. As a part of its
evaluations FAC surveyed teacher perceptions of the PLCs’ effectiveness. FAC then establish PLCs for the coming school year to include existing PLCs that receive a positive evaluation and any newly proposed PLC groups deemed appropriate. FAC continued the Action Research PLC. Membership of that PLC consisted of two trained cohort teachers as well as three other teachers that chose to participate. The final membership of the Action Research PLC identified a facilitator and scheduled its initial meeting.

During the month of October 2010, an initial Action Research PLC meeting took place and defined the purpose of the PLC, scheduled future meetings, and introduced action research to members who were not experienced with action research. Cohort members shared the progress of their current cycle of inquiry and other members of the PLC began to formulate individual classroom action research projects if they had not already done so.

During the months of November and December 2010, PLC members continued their individual classroom research and met as a PLC to share their experiences. Cohort members presented professional literature and data collection methods and other PLC members identified final individual classroom action research project interventions.

**Data Sources and Collection**

The data of this study were analyzed using a collaborative social research model to identify underlying themes and patterns using non-standardized
instrumentation (Miles & Huberman, 1994). This mixed methods research utilized both quantitative and qualitative data that were gathered from August through December 2010 (see Appendix C). A mixed methods approach was used to triangulate and complement data sources with validity dependent upon the coherence and corroboration of numerous lines of evidence (Green, Caracelli & Graham, 1989; Smith, 1997). The following describes the survey, interviews, research journal, PLC meeting transcriptions, and artifacts used as instruments and methods to gather data for my action research.

Survey. A thirty item collaborative practitioner inquiry survey of my own design, informed by previous cycles of inquiry, was administered at the beginning of the study to six teachers that completed the action research professional development and at the end of the study to five Action Research PLC members (see Appendix D). Quantitative data were collected using a four-point Likert scale with ratings ranging from 4 (strongly agree) to 1 (strongly disagree). The quantitative data of the survey were designed to assess the effect of my intervention on teachers’ attitudes and assumptions regarding my leadership and professional development efforts, the application of individual teacher action research within the classroom, and the impact of the teachers’ action research on professional development.

An additional open-ended question for each of the five survey constructs (Application of Action Research, Value of Action Research, Impact Upon
Collaboration, Impact Upon Reflection, and Action Research Professional Development) was included in the survey. The teachers’ responses to the open-ended questions served to inform my study by triangulating and complementing individual interviews. Pre-survey results were used to establish a baseline and post-survey results used to determine changes in teacher professional development.

**Individual interviews.** A semi-structured interview process with each of the three teachers identified as the focal group was used to determine the effect of my leadership and professional development efforts, the application of individual teacher action research, and the impact of that action research on individual teacher professional development (see Appendix E). I conducted a series of three individual interviews with each of the three teachers in the focal group. Focal group membership was determined to include differing levels of action research experience and training among the members. The series of interviews were conducted in the week of October 25th, the week of November 15th, and the week of December 6th.

The three individual interviews consisted of open-ended questions. The questions of the initial interview were informed by a pragmatic theory of inquiry, which contends that people think and learn by continuous inquiry within their environment (Dewey, 1910/2005). Specifically, my first interview questions were for the purpose getting the interviewees to reflect upon their personal inquiry and
describe their courses of action. Questions for the two subsequent interviews were used for the purpose of expansion (i.e., probing reflection, collaboration, or use of data) by articulating my analysis of the initial action research survey, previous interviews, and my own reflection. The individual interviews employed the same set of questions for each focal group member in each of the three rounds of interviews. The interviews were digitally audio recorded and transcribed verbatim for analysis. A copy of the transcription was provided to the interviewees as a member check for the triangulation of data and to enhance validity. As a member check, I asked each interviewee to review the transcription for accuracy and provide me any corrections in writing.

Research journal. As a co-facilitator and participant of the scheduled Action Research PLC meetings during the weeks of October 4th, November 1st, and November 29th, I recorded my observations and reflections in a research journal (see Appendix F). The journal entries from these research experiences served as a way to reflect on and record the impact of my action research innovation. Additionally, I made weekly reflective entries in the journal that were not a result of direct observation, but instead resulted from analyses of the survey, interviews, or artifacts. Entries to my research journal considered new information, described how that information affected my investigation, and how this new information complemented other data sources. Two examples of new information were my recognition of the increased leadership of the teacher co-facilitator immediately
exhibited in the first PLC meeting and the degree of action research application demonstrated by the trained cohort members.

**Meeting transcriptions.** The teacher dialog and interactions of the scheduled PLC meetings were digitally audio recorded and transcribed verbatim for analysis. A copy of the transcription was provided to the PLC members for them to check its accuracy and to obtain their responses. I asked the members of the PLC to review the transcription for accuracy and provide me any corrections in writing.

**Artifacts.** Members of the focal group completed several artifacts during the course of my innovation that were collected as artifacts and used to inform my study. These artifacts included individual teacher classroom action research plans and materials used for teacher presentations to colleagues regarding their classroom action research projects.
Chapter 4 Methodology, Analysis, and Results

This chapter reports how the data were analyzed and the corresponding results. It includes two sections, methodology as well as analysis and results.

Methodology

The analysis of data in this study followed a mixed-methods methodology. A mixed methods approach is a unique methodology that supports the use of both qualitative and quantitative data to provide depth and divergence for understanding social phenomena. Mixing quantitative and qualitative methods and giving them equal consideration contributes to understanding social phenomena better than when relying on a single method (Tashakkori & Teddlie, 2003). This methodology does not give more meaning to any single form of data, but provides for the integration of varying data sources at differing points to address the study’s research questions (Green & Caracelli, 1997).

Diverse data sources are a key aspect of mixed-methods methodology (Greene, 2006, 2007). This methodology invites that which deviates and is not consonant as well as that which resonates and is in concert in determining the effect of one’s action. Mixed methods methodology enhances the researcher’s perspective of their study by holding the advantage of a combination of data sources and analytic methods that differ considerably from one another.
Analysis and Results

Quantitative analysis. The collaborative practitioner inquiry survey was the single quantitative data source for this study. The purpose of the survey was to measure the impact of collaborative practitioner inquiry and my leadership on teacher professional development. The five participants completed this survey at the end of this study; one participant completed the survey at the beginning and end of this study. For clarification, of the five participants that completed the final survey, only two of them had completed the action research training, and of those two, one completed the initial action research survey at the conclusion of the training and the other did not.

To analyze the quantitative data, I computed a reliability measure (i.e., Cronbach’s alpha) and descriptive statistics (i.e., means, confidence intervals, and standard deviations) on the survey’s five constructs as well as the total. Second, I arrayed each participant’s survey scores by item, construct, and total. I did this so that I could conduct an inductive analysis, searching for meaningful patterns among the data. I did not statistically compare scores due to the small number of participants. Finally, I computed the percents of change evidenced by the one participant who completed the survey at the beginning and end of this study.

Quantitative results. Table 2 lists reliability and descriptive statistics for the five participants’ survey responses. As Table 2 shows, there were acceptable levels of reliability (Cronbach’s alpha of .70 or higher) among all five survey
constructs as well as the total. Mean scores for the constructs approached the maximum of four, ranging from 3.51 to 3.68. The mean score for all survey items was 3.55. Little variability in scores was noted. These survey results suggest participants’ uniform strong agreement that collaborative practitioner inquiry contributed positively to selected aspects of their professional development.

Table 2

Final Survey Instrument Reliability and Descriptive Statistics (N = 5)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Coefficient Alpha</th>
<th>Mean</th>
<th>95% CI</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of Action Research</td>
<td>0.70</td>
<td>3.68</td>
<td>[3.78, 3.58]</td>
<td>0.11</td>
</tr>
<tr>
<td>Value of Action Research</td>
<td>0.71</td>
<td>3.68</td>
<td>[3.84, 3.52]</td>
<td>0.18</td>
</tr>
<tr>
<td>Impact Upon Collaboration</td>
<td>0.88</td>
<td>3.56</td>
<td>[3.74, 3.38]</td>
<td>0.20</td>
</tr>
<tr>
<td>Impact Upon Reflection</td>
<td>0.87</td>
<td>3.51</td>
<td>[3.65, 3.37]</td>
<td>0.16</td>
</tr>
<tr>
<td>Action Research Professional Development</td>
<td>0.96</td>
<td>3.51</td>
<td>[3.65, 3.37]</td>
<td>0.16</td>
</tr>
<tr>
<td>Total</td>
<td>0.95</td>
<td>3.55</td>
<td>[3.70, 3.40]</td>
<td>0.17</td>
</tr>
</tbody>
</table>

*Note.* Maximum Score = 4.

Appendix H presents each participant’s survey instrument scores by item, construct, and total. As can be seen, Item Five, “Action research helps me become a problem solver for issues in my classroom” received the highest response.
possible, a score of four, among all five participants. This score points to the
participants’ perceived abilities to make positive changes to their classroom. With
this said, there are moderating data within the Application of Action Research
construct that deserve attention. Item Two, “I can better collect data as a result of
implement action research in my classroom” and Item Three, “Doing action
research helps me learn how to analyze data” were scored lowest across all items,
receiving scores of three among all participants. These results suggest that although
participants reported being comfortable with the action research process, they
apparently perceived a need for additional training in regard to the use data within
their individual action research projects.

The Impact Upon Collaboration construct scores suggest that participants
strongly agreed about their opportunities to share the progress of their
collaborative practitioner inquiry and their learning of effective ways to work with
other teachers. Item 12, “Use of collaborative practitioner inquiry results in greater
collaboration with my peers,” also received the highest response possible, a score
of four, among all five participants and is likely indicative of enhanced
collaboration among the participants.

Participants’ total scores pointed to potential differences among the
individuals. Interestingly, one of the two participants who completed the action
research professional development, Mrs. Red, scored the highest total score among
the five participants for all survey items. Additionally, Mrs. Red applied the
highest possible response, a score of four, to all the constructs except Application of Action Research.

Table 3 compares the initial and final scores for the one participant who completed both administrations of the survey. It should be acknowledged that this teacher participated in both the action research professional development during August 2010 and the Action Research PLC during the fall 2010 semester. Notable for this participant are the appreciable percentage gains in the areas of application of action research and professional development as well as the reported loss in the area of impact of collaboration. The participant demonstrated the ability to understand and apply action research, but there was no perceived benefit to collaboration.
Table 3

*Survey Instrument Descriptive Statistics for Mrs. Grey*

<table>
<thead>
<tr>
<th>Construct</th>
<th>Initial Survey (IS)</th>
<th>Final Survey (FS)</th>
<th>IS – FS</th>
<th>Percent of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of Action Research (Items 1-5)</td>
<td>3.20</td>
<td>3.60</td>
<td>0.40</td>
<td>+12.50</td>
</tr>
<tr>
<td>Value of Action Research (Items 6-10)</td>
<td>3.60</td>
<td>3.60</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Impact upon Collaboration (Items 11-17)</td>
<td>3.57</td>
<td>3.14</td>
<td>-0.43</td>
<td>-12.04</td>
</tr>
<tr>
<td>Impact upon Reflection (Items 18-23)</td>
<td>3.17</td>
<td>3.33</td>
<td>0.16</td>
<td>+5.05</td>
</tr>
<tr>
<td>Action Research Professional Development (Items 24-30)</td>
<td>3.57</td>
<td>3.86</td>
<td>0.29</td>
<td>+8.12</td>
</tr>
<tr>
<td>Total</td>
<td>3.43</td>
<td>3.50</td>
<td>0.07</td>
<td>+2.04</td>
</tr>
</tbody>
</table>

*Note.* Maximum Score = 4.

**Qualitative analysis.** To answer my research questions, I analyzed the qualitative data sources in the chronological order in which they were collected. Table 4 displays an inventory of the qualitative data gathered and analyzed in this study.
Table 4

*Data Sources Inventory*

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Description</th>
<th>Contents</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLC</td>
<td>PLC meetings were recorded and transcribed. Five teachers and I participated in three PLC meetings. The meetings were approximately 45 minutes in length.</td>
<td>46 single-spaced, one-sided pages.</td>
<td>130 minutes</td>
</tr>
<tr>
<td>Observation/Participation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Focal Group Interviews</td>
<td>Interviews were recorded and transcribed. Three teachers identified as the focal group each participated in three separate interviews. Each interview was approximately 12 minutes in length.</td>
<td>34 single-spaced, one-sided pages.</td>
<td>107 minutes</td>
</tr>
<tr>
<td>Research Journal</td>
<td>Reflective entries were made weekly in my research journal.</td>
<td>24 single-spaced, one-sided pages.</td>
<td>450 minutes</td>
</tr>
</tbody>
</table>

To analyze the qualitative data I generated data codes using a constant comparative method (Lincoln & Guba, 1985). I put the text of the transcripts from each of the interviews and PLC meetings as well as the responses to open-ended
questions in the survey into individual spreadsheets using sentences as the unit of analysis. Independently for each data source, I identified key terms and then generated codes for the patterns discerned among the qualitative data. Codes were not predetermined, but were constructed inductively based on my reading of the PLC and interview transcripts as well as the research journal. Coding continued until all data had been classified and no more patterns could be identified (Miles & Huberman, 1994). The responses of the focal group members were color coded within the spreadsheets to monitor and cross-reference the contributions of each of the three focal group members.

**Qualitative results.** I constructed 28 codes that responded to this study’s research questions about the contribution of collaborative practitioner inquiry and my leadership to Desert Sands teachers’ professional development. Table 5 shows the codes and their definitions. In general, the codes center on understanding and demonstrating knowledge and competency of conducting action research, use of professional literature and data to inform one’s practice, identifying best practices and making change to one’s practice, and the impact of classroom action research upon student learning and behavior.

In examining PLC meetings and interview transcripts, the participants demonstrated a deeper understanding of classroom action research. I observed in action research PLC meetings that the participants exercised a vocabulary pertinent and unique to action research. This use of language was more prevalent among the
trained cohort members, but was also exhibited, by the time of the third PLC meeting in December 2010, by those that had not received the action research training. Interviews also supported teacher understanding and comprehension of classroom action research. Data would also demonstrate that teachers collaboratively considered changes to their instruction with changes that focused upon the identification of best practices within their classrooms. Transcripts of the PLC meetings and interviews show that participants broadened their definitions of student data so as to include such things as survey and interview. Also, the participants exhibited an enhanced understanding of accessible professional literature that could be used to inform their practice.

Table 5

*Data Codes and Their Definitions*

<table>
<thead>
<tr>
<th>Code</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Research Process</td>
<td>Teacher demonstration of knowledge and competency of how to conduct an action research inquiry cycle in the classroom.</td>
</tr>
<tr>
<td>Applying Action Research</td>
<td>Teacher demonstration of their ability to apply and use action research in the classroom.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Assessing Students</td>
<td>Teacher determination of the learning needs of students or the competency of their students in regard to a standard.</td>
</tr>
<tr>
<td>Best Practices</td>
<td>Teacher identification of what is most instructionally effective in the classroom.</td>
</tr>
<tr>
<td>Changes to Student Behavior</td>
<td>A change in student actions or demeanor to the benefit of their own learning.</td>
</tr>
<tr>
<td>Changes to Practice</td>
<td>Teacher identification of a specific change to one’s instructional practice.</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Teachers working together for a defined purpose or intellectual endeavor.</td>
</tr>
<tr>
<td>Collegiality</td>
<td>The willingness on the part of teachers to associate or cooperate.</td>
</tr>
<tr>
<td>Curriculum</td>
<td>The defined content and standards of a specific subject area.</td>
</tr>
<tr>
<td>Determining Needs of Students</td>
<td>Teacher identification of learning or behavioral needs of students.</td>
</tr>
<tr>
<td>Facilitation</td>
<td>Assisting the interactions of teachers for collaborative purposes.</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Innovation</td>
<td>Teacher use of a new and creative method to resolve a critical issue in their classroom.</td>
</tr>
<tr>
<td>Parent Involvement</td>
<td>Relating to parents as a part of their children’s learning process.</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>Teacher identification and provision of solutions to critical issues in the classroom.</td>
</tr>
<tr>
<td>Professional Growth</td>
<td>A comprehensive, positive, change to one’s instructional practice.</td>
</tr>
<tr>
<td>Rewards</td>
<td>Remuneration or tangible benefit for having done something positive in the classroom.</td>
</tr>
<tr>
<td>Student Achievement</td>
<td>A cumulative, positive change in student academic performance.</td>
</tr>
<tr>
<td>Student Engagement</td>
<td>Minds on activity or processing by the student.</td>
</tr>
<tr>
<td>Student Learning</td>
<td>Student exhibition of a mental skill or ability to meet a curricular standard.</td>
</tr>
<tr>
<td>Student Reflection</td>
<td>Student consideration of their own learning.</td>
</tr>
<tr>
<td>Targeting Instruction</td>
<td>Teacher identification of a specific instructional strategy to impact student learning.</td>
</tr>
<tr>
<td>Teacher Leadership</td>
<td>A teacher motivating other teachers to work collaboratively to successfully accomplish a task.</td>
</tr>
<tr>
<td><strong>Teacher Learning</strong></td>
<td>A teacher’s change of mindset or understanding of a concept.</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Teacher Reflection</strong></td>
<td>Teacher self-examination of their practice.</td>
</tr>
<tr>
<td><strong>Time Management</strong></td>
<td>Teacher use of time for the greatest productivity.</td>
</tr>
<tr>
<td><strong>Understanding Action</strong></td>
<td>Teacher learning of the action research process for their classroom</td>
</tr>
<tr>
<td><strong>Use of Data</strong></td>
<td>Teachers informing their classroom research and practice by use of broad spectrum of student data, including tests, survey, or observation.</td>
</tr>
<tr>
<td><strong>Use of Instructional Strategies</strong></td>
<td>Teacher exemplification of a broad understanding and use of differentiated instructional strategies.</td>
</tr>
<tr>
<td><strong>Use of Literature</strong></td>
<td>Teachers informing their practice through professional educational literature.</td>
</tr>
<tr>
<td><strong>Use of Research</strong></td>
<td>Teachers demonstrating knowledge of research to make changes to their instructional practice.</td>
</tr>
</tbody>
</table>
Chapter 5 Findings

After organizing and initially analyzing the quantitative and qualitative data, I conducted an integrative analysis to construct assertions that answered my research questions. Following guidelines by Erickson (1986) and Smith (1997), I conceptualized key linkages across the data sources by examining both the coded spreadsheets and the survey scores. I used an inductive analytic approach to determine and test patterns of data in order to formulate a set of assertions. I listed the assertions relative to my research questions and systematically examined each assertion across the data sources to record the codes and scores that supported or refuted them.

Evidence within the data that supported or refuted the assertion was listed and cross-referenced to the assertion and research question. Those assertions with the larger body of supporting data were considered to have greater validity. Assertions were revised based on discrepant data, and disconfirming data were used to illustrate the complexity of professional development, the phenomenon of interest in this study (Erickson, 1986; Smith, 1997).

My analysis of the data collected during the study led to the construction of five assertions. The first two assertions directly focus on what collaborative practitioner inquiry contributed to participants’ professional development. They are as follows:
• Collaborative practitioner inquiry contributed to participants’ applications of the professional literature to their practice.

• Collaborative practitioner inquiry contributed to participants’ grasp of using data to inform their practice.

The second two of my five assertions focus on elements within collaborative practitioner inquiry that played noteworthy roles in its outcomes. They are as follows:

• Collaboration was a positive, though somewhat complex, element of collaborative practitioner inquiry.

• Identifying and testing specific instructional practices was a key, yet challenging, element of collaborative practitioner inquiry.

The final assertion focuses on the impact of my instructional leadership upon teacher professional development. It is as follows:

• My instructional leadership enhanced teacher application of collaborative practitioner inquiry.

**Applying the Professional Literature to Practice**

Collaborative practitioner inquiry seemed to be a factor in teachers recognizing the importance of professional literature to guide and inform their instructional practice. Evidence of the teachers’ perceived benefit of the professional literature in fall 2010 is seen in Table Two, which shows high positive scores for the Application of Action Research construct and in Appendix I, which shows that Item One, “As a result of my using action research I
understand the importance of applying professional literature to my practice,” was scored a four, the highest response possible, among four of the five participants.

Additional support for this assertion comes from the qualitative data. Two members of the Action Research PLC implemented interventions as a part of their instruction that addressed changing the behavior of students. In the first instance, Mrs. Grey focused on routine and consistent student use of notebooks by the students in her Algebra classes, and in the second instance, Mrs. Red focused on the use of a specific note-taking format to be used by her Geometry Honors students. Both teachers sought to implement an instructional intervention that would create positive change to student behavior resulting in enhanced student learning.

Throughout this fall 2010 action research cycle, the teachers routinely referred to the professional literature in PLC meetings to support their interventions and the related changes made to their instructional practice. In particular, Mrs. Grey and Mrs. Red demonstrated that participants recognized the value of the use of professional literature to inform their practice. Mrs. Grey expressed it well when she stated,

“I do not do a lot of professional educational reading, but that [research of professional literature] was kind of interesting, the number of sites [websites] that actually had information that was pertinent to my teaching and just knowing that they [websites] are available and I can go look at them and say, ‘OK here is what the
research says, here is something I should be trying’”

(INT.GRE.11-15-10).2

Each of the participants referenced their use of professional literature at least once within a PLC meeting. It generally was done to reinforce their interventions and lend support or purpose to their individual classroom action research projects. For instance, at the December 2nd PLC meeting, Mrs. Grey supported her intervention of students’ use of notebooks by referencing a relevant study conducted at a notable university as she shared what she had discovered within that study with the Action Research PLC (PLC.GRE.12-2-10). She was extremely enthusiastic about her discovery for two reasons. One, the literature gave credence to her endeavor, because she was replicating a portion of the study to some degree. Two, she discovered a survey that had been administered within the study that, with some modification, she determined could be implemented to measure the impact of her intervention within her own action research. At the conclusion of this study she had not yet do so.

Additionally, Mrs. Grey shared with the PLC that she noted a reference in the professional literature to another article that might be of additional use to inform her action research and instructional practices (PLC.GRE.12-2-10). At the time of the PLC meeting, she had not yet been able to access the article, but she

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2 Parenthetical information specifies data based support for assertions. The first letter string identifies the data source (INT=Interview; SUR=Survey; PLC=PLC meetings), the second letter string identifies the pseudonym for the participant, and the numerals identify the date.
stated that she would do so. In an interview Mrs. Grey stated, “I never realized that there was that much literature backing tried and true practice” (INT.GRE.12-9-10). Her words and actions during this meeting suggest that she realized that the professional literature was expansive and informative, and the discovery of one pertinent piece of research may lead to the discovery of others.

Mrs. Grey was the only participant to complete both the initial and final collaborative practitioner inquiry survey. When comparing results of the initial to the final survey she demonstrated a noteworthy percentage gain of 12.50% for the Application of Action Research construct (see Table 3), which contains the item, “As a result of my using action research I understand the importance of applying professional literature to my practice.”

Mrs. Red supported her intervention of a specific note-taking format at the December 2nd PLC meeting by referencing three different pieces of professional literature (PLC.RED.12-2-10). A unique aspect of the literature that she shared with the PLC was a distinction she was able to make between her prescribed method of student note taking versus a professional literature reference to what she simply described as guided notes. This distinction was important to her, because an intended result of her note taking method was to stimulate students’ higher order thinking as they reviewed and processed information within their notes. Additional evidence that Mrs. Red recognized the importance of professional literature is that she scored the statement, “As a result of my action
research I understand the importance of applying professional literature to my practice” with a four, the highest score possible, on the final survey.

Using Data to Inform Practice

Collaborative practitioner inquiry appeared to contribute to the participants’ understanding of the need for student data to assess the results of their instruction, awareness that assessment data went beyond typical tests and quizzes, and acknowledgement that multiple data were informative. Foremost, the participants in the study came to recognize the necessity of data to inform one’s practice. In this context practice refers to teaching and learning. Specifically, participants used a variety of data to better reflect upon the effectiveness their teaching, and perhaps more importantly, they were more informed as to how their students learned. The following comments from interviews and a PLC meeting suggest that the participants demonstrated an understanding of the importance of data to inform their practice:

• “Something that is a successful teaching practice I think really has to have some data behind it that says, ‘Yes, it has worked, and here is why it has worked, and here is the number of kids it has affected’ ” (INT.GRE. 12-9-10).

• “I just don't know how you would know if it [instructional change] succeeded or not without the data or what tweaks you needed to make, because maybe your data told you this part of
it worked, but this other part [a component of the instructional change] did not” (INT.RED. 12-7-10).

• “I still plan to do a survey of the students before I turn in my final research project about what they [students] thought about keeping track of a notebook, whether they thought it was beneficial” (PLC.GRE.11-4-10).

Participants discussed not only an understanding of the necessity of data; they also came to realize the benefit of using data sources that spoke to not only what students learned, but how they learned. In determining the impact of their action research, the participants expressed that they wanted to directly gather input from the students who went beyond what they might see in a grade book. One teacher stated, “I think especially for my research plan with the organization, I want to get the kids’ viewpoint” (INT.GRE.11-15-10). This statement seems to reflect the teacher’s acceptance of how one might assess one’s own instruction. It can be seen as representing a mindset that data are not just quantifiable, but they can, in fact, be qualitative. It can be seen as the teacher’s realization that summative data generated about whole groups of students are appropriate, but data generated about students as individuals also warrant attention.
Another perspective about data involved student involvement. For instance, one participant expressed the idea that student data should be used by teachers not only to inform their teaching, but it also should be used by students to inform their learning. The participant put it this way, “The survey is not necessarily for me, but about them [students], so they can reflect [on their learning]” (INT.YEL.10-29-10). This statement represents a change in perspective as to how the participants viewed the significance and use of student data.

Still another aspect of participants’ uses of classroom data involved various data sources. Participants looked beyond typical data sources, such as test scores or quarter grades, and came to use a variety of data sources for their action research. This use of various data sources represented a departure from traditional assessments. The conversation in the PLC meetings represented an inquisitive, probing look at assessing learning and instruction on the part of the participants. These data sources included surveys, interviews, observations, and checklists. The various uses of diverse data sources were expressed as follows:

- “So rather than just relying on tests and quizzes [as data sources], I do a lot of observation [to assess student comprehension]” (INT.GRE.11-15-10).
• “My understanding of action research is that you collect data that is not all about the numbers; it can be about surveys and interviews” (INT.RED.11-16-10).

• “[I use] a lot of informal, little interviews [to assess student understanding of a concept]” (INT.YEL.11-16-10).

• “I’m going to come up with a survey [to measure impact of the notebook on student organization and learning] that I’m going to give the kids probably next quarter and it’ll be, ‘Have you ever kept a notebook before? Was it helpful to your learning? How is this notebook different than the others?’ and then come up with a checklist [an organizer for the notebook] then have the kids do that to have as data, too” (PLC.GRE.10-7-10).

The participants not only used varying data sources, but they seemed to understand that these varying sources, when triangulated, served the purpose of confirming or disconfirming the results of their interventions. As one teacher stated,

“I just see that it is more about the whole person and how they are learning instead of just one specific piece. And I think that also, when you do it [action research], there is a triangulation of the data so you are not just looking at one specific thing, it is an overall view [in assessing the intervention]” (INT.RED.11-16-10).
While it was apparent that participants placed value on student data, the collaborative practitioner inquiry survey results suggest that they may have benefited from additional professional development in the use of data. Within the Application of Action Research construct (see Appendix I), Item Two, “I can better collect data as a result of implementing action research in my classroom” and Item Three, “Doing action research helps me learn how to analyze data,” both earned scores of three among all participants and were the two lowest scoring items on the survey.

The potential need for additional training in regard to statistical analysis was expressed. One participant stated, “And then I looked at my data and I need to put numbers with it to make more sense of it. But it's almost like I need to take a stats class or something” (RED.PLCl.12-2-10). This comment acknowledges a shortcoming of the training’s curriculum. Data collection and use were significant components of the participants’ professional development I provided in the summer and in which the teacher participated. The curriculum of the summer workshop included topics such as qualitative versus quantitative data, data sources (surveys, interviews, writing samples), and data analysis (triangulation). These topics were presented on day two of the three-day training, and they comprised about one-half of the five-hour session. Notable is that the training did not deeply explore statistical analysis.
Collaborating

The interaction of the Action Research PLC members throughout their three meetings was collaborative, with the participants sharing the progress of their action research and suggesting ideas with one another. Collaboration on the part of the participants was uniformly recognized as beneficial to the identification of a specific instructional strategy for their individual action research intervention. The following comments from participant interviews suggest that the participants realized value in sharing their action research interventions and instructional practices with one another:

- “If you don’t sit down and talk to people on how you do things [instructional strategies], I think you are losing a lot of instructional practice and instructional strategies, so it is extremely important to collaborate” (INT.GRE. 12-9-10).

- “I think collaboration is huge because we do not live in a bubble and you get into a rut and you keep doing your same thing [instructional strategy or class management] over and over and you can just learn so much from other teachers” (INT.RED. 12-7-10).

- “When we [the participants] are in the sort of that group [PLC] and we are talking, I find myself thinking more about solutions” (INT.YEL.12-8-11).
Through my participation in PLC meetings, I observed interaction among participants that went beyond collegiality to that of collaboration as they assisted one another identify specific instructional practices that might be tried in their classrooms. For example, two of the PLC members had some difficulty identifying a specific intervention that could be used in their action research. After two meetings and some frustration, one teacher stated, “I am almost thinking now that I almost need to change my research question” (PLC.TEA.12-2-10). The sense of frustration on the part of the teacher was evident, but the resulting dialog of the PLC was positive and constructive putting her at ease. For a considerable time of the PLC meeting in which she expressed her frustration, each of the PLC members offered a specific suggestion that could be utilized by this teacher.

Results of the final collaborative practitioner inquiry survey suggest that my initiative contributed to participants’ collaboration. The high positive result for the Impact Upon Collaboration construct (see Table 2) supports this finding. Specifically, all five participants rated Item 12, “Use of collaborative practitioner inquiry results in greater collaboration with my peers,” as a four, the highest score possible. This item was one of only two items that were rated so high.

Despite the general tendency for participants to indicate enhanced collaboration due to collaborative practitioner inquiry, Mrs. Grey conveyed some complexity related to her collaboration. Her survey scores for the “Impact Upon Collaboration” construct decreased from the initial to the final survey (see Table
3) In the final survey, her score for this construct was the lowest among all participants for all constructs. Also, her score of two, out of a possible four, signaled disagreement with the item, “Use of collaborative practitioner inquiry improves communication among my peers.” Her response to this item was the lowest score among all participants for all survey items. Although, Mrs. Grey did respond in the final survey that she looked for opportunities to share the progress of her collaborative practitioner inquiry intervention. It seems that this participant was saying that my initiative did little to develop the groups’ collaboration though she believed collaboration was good for professional development.

**Examining Instructional Practices**

From the participants’ perspectives, identifying specific instructional strategies as potential solutions to problems of practice was a key, yet challenging, component within the PLC members’ interactions. In regard to identifying an action research intervention, one teacher stated, “My understanding of action research is that it is a process of examining issues in your classroom through the lens of research-based approaches” (INT.YEL.11-16-10). Her perspective was critical because this teacher served as co-facilitator of the Action Research PLC and played a vital role in steering dialog to meaningful discussion of instructional practices.

During the course of my study, the participants expressed their realization of the importance of identifying a single, specific instructional strategy to
implement, of thinking small to create a large change. In regard to specificity, at the conclusion of the study one teacher stated, “So that is something I really took away with this [action research], that just focus on one thing, it doesn't have to be huge, overwhelming, and you can just see if that works” (INT.RED.12-7-10). Another stated, “I was most affected by the idea of looking at a very small area to change and then targeting strategies, based on research, that would help you improve student achievement” (SUR.GRE. 11-29-10).

The participants demonstrated that the process of narrowing action research interventions via PLC meetings took time. Two of the five participants had little difficulty identifying a specific action research intervention and were well on their way by our first meeting. However, these two teachers were members of the trained cohort and had given much thought to their action research projects in advance of our initial PLC meeting. My observations showed that the three other participants spent the better part of the study identifying a specific instructional strategy to be used as their action research intervention.

In my participation within the PLC meetings, I observed that the participants offered suggestions to one another as they talked with specificity of instructional experiences they had encountered and how these shared experiences could be of benefit to their colleagues. Teachers freely shared the implementation of their action research projects, and the subsequent discussion of their interventions led to the identification of specific instructional practices. By the end
of the study in December 2010, the identified instructional practices to be implemented as interventions by the participants included: (a) student use of a structured notebook, (b) a specified student note taking strategy, (c) an exit pass for students to bring closure to a classroom activity, (d) cueing students to increase student engagement, and (e) parent contact for failing students. The identification of these instructional practices as action research interventions took place over a period of two months and three PLC meetings. At the close of this fall semester study, only two of the preceding interventions, student use of a structured notebook and a specified note taking strategy, had been fully implemented and the participants were in the process of data collection to determine impact on student learning. Three of the participants made limited progress in identifying and implementing an intervention by the end of the study. Availability of time and not attending the summer training may have had some impact on their progress. In regard to time, one participant stated, “I am very familiar with the process [action research], but my ability to conduct action research really is only hampered by time” (INT.YEL.12-8-10). In reference to training, one participant stated, “I think it would be even better if everyone would have been in the class [action research professional development] this summer just because then everyone would be on the same page” (INT.RED.10-26-10). These two variables, time and training, appeared to have had the greatest bearing on the progress of teacher research projects.
Instructional Leadership

The participants’ recognition of the positive instructional leadership role I played in their application of collaborative practitioner inquiry was evident from interview and survey responses. They tended to focus on the action research training I provided in August 2010 more than my co-facilitative role within the PLC during the fall semester. When prompted to, “Describe my role in regard to your learning as a teacher” in interviews conducted in December 2010, the following comments suggest that the participants valued my instructional leadership:

- “Right, well the big thing to me was the class this summer [August 2010 action research professional development training]. I learned the most, but also just in the PLC, and I think because I took the class [action research training] so I am always referring to that you will mention things or say things in the PLC referencing to the class, but the other people that weren't in the class wouldn't know that” (RED.INT.12-7-10).
- “Well I think as a mentor for action research you have kind of demonstrated the practices that we needed to do, shown us step-by-step exactly what the process was, and you have been so encouraging about all of our action research plans, even if they are not finalized,
you are still very, very encouraging about what we have been doing and I think that has been very helpful” (INT.GRE.12-9-10).

- “I think your role as principal is to attempt to bridge the gap, bridge that chasm sometimes between what has to be done and how to do it” (YEL.INT.12-8-10).

The survey results suggest that the provided training was vital to the participants understanding of action research. The two participants who received the action research training had the two highest averages for the Action Research Professional Development construct. These two participants scored six of the seven statements with a four out of four, the highest score possible. On the narrative portion of the survey, one participant stated, “This [the action research training] is where I learned that we want to have a narrow focus and our intervention should focus on one procedure or intervention so we know in the end if it worked or not” (RED.SUR.12-15-10). Mrs. Grey, one of these two participants who completed the action research training and the only participant to respond to both the initial and final collaborative practitioner inquiry survey, showed a gain of 8.12% for the Action Research Professional Development construct.

My participation in the PLC, which was one of participant-researcher, allowed me to provide leadership while at the same time be the observer of teacher interaction to better inform my study. The participants seem to have perceived my
diminished leadership role within the Action Research PLC. For example, one of the two participants who had received the action research training in the summer scored the statement, “The principal’s co-facilitation of the Action Research PLC has a positive effect upon my understanding of collaborative practitioner inquiry” with a three. She had scored all other statements within the Action Research Professional Development construct with a four. Interestingly, this same statement recorded an average response of 3.4, the second lowest average score among all participants for all statements within this construct.

While the survey results pointed to only somewhat positive perceptions of co-facilitation of the PLC, there is evidence to suggest strong agreement about the positive value of action research training. These results might be due to my desire to diminish my leadership role, encouraging distributive leadership and promoting teacher leadership within the PLC.
Chapter 6 Conclusion

Discussion

The theoretical lens to my study was that of inquiry and action. As previously referenced, Dewey states, “To maintain the state of doubt and to carry on systematic and protracted inquiry – these are the essentials of thinking” (Dewey, 1910/2005, p.12). When we think, we question, gather data, come to a conclusion, and in doing so expand our knowledge. However, knowledge possessed is not enough, we must also act and apply knowledge (Biesta & Burbules, 2003). This study indicates that the Desert Sands participants were, in fact, thinking and taking action as a result of the inquiry exemplified in their classroom action research projects. The teachers’ identification of a specific problem within their classroom, their creation and application of a focused intervention, and their uses of triangulated data to support their findings, spoke to their ability to inquire, act, and think.

In particular, participants demonstrated two noteworthy types of thinking. They exhibited evidence of metacognition, self-knowledge of one’s own cognition (Krathwohl, 2002). Their comments suggest that they were monitoring their professional knowledge then strategically seeking new knowledge that pertained to the issues at hand. Additionally, they demonstrated thinking at the create level, the ability to piece components together to form a new, innovative, or original product (Krathwohl, 2002). Their comments indicate that they were combining
information from their readings, conversations, and classroom interactions to produce new professional knowledge.

Not only were the participants thinking at high levels, but their action research resulted in unique, individually designed professional development embedded within their own daily instructional practice. Embedded professional development linked directly to the classroom is crucial to teacher learning and action research, as a form of practitioner inquiry, can serve as the vehicle for that professional development (Calhoun, 1993, 1992; Cardelle-Elewar, 1993; Levin & Rock, 2003; Speck & Knipe, 2001, 2005). A notable feature of collaborative practitioner inquiry as professional development was the participants’ abilities to utilize both professional literature and data. They seemed to develop a fresh grasp of the expanse of professional literature available to them, as well as the power of this literature to routinely inform their practice. The teachers also broadened their definition of student data, going beyond that of summative information such as grades and tests and taking up other evidence such as interviews and surveys to assess their interventions. Moreover, the participants discovered that using a variety of data better measured their interventions and provided greater validity to their action research. Lastly, the participants discovered that such measures could be incorporated as a routine part of their instructional practice.

This study was based in part on the conceptual framework provided by Wenger (1991, 2008a) involving the role of interpersonal interaction in learning.
The Action Research PLC created a forum in which teachers could collaboratively share their investigations. Additionally, the PLC afforded a collective inquiry, an orientation of action and experimentation, that resulted in change becoming a part of their practice and vital to their learning (DuFour & Eaker, 1998; Levin & Rock, 2003). Teachers reported valuing the opportunity to work with one another and offered ideas as well as support to their colleagues. The participants’ individual sharing of setbacks and the collective offering of solutions was a norm of the PLC meetings. Additionally, collaborative participation in the Action Research PLC encouraged the testing of new, innovative instructional practices.

As noted in my previous cycles of inquiry, I was curious about the influence of my instructional leadership and the role I played in collaborative practitioner inquiry. Within this summer and fall 2010 cycle of inquiry, I played an overt leadership role by instructing the action research professional development, but I also assumed a more diminished role and allowed for greater teacher leadership in the facilitation of the PLC. The success of a PLC depends upon the leadership of the principal and the ability of that principal to share authority and participate without dominating (Hord, 1977). In this research cycle, a component of my innovation was the provision of action research professional development. This study indicates that the participants perceived my action research professional development to be beneficial to them in shaping their understanding and application of action research. In regard to my role as co-
facilitator, it seems that my diminished role reinforced teacher led collaborative practitioner inquiry and, perhaps, might in the future contribute to inquiry becoming a part of the school’s culture.

**Implications for Practice**

I see several ways to apply what I learned about collaborative practitioner inquiry to professional development practices at Desert Sands High School. As a result of this cycle and the previous cycles of inquiry, I anticipate continuing to promote teachers’ incorporation of professional literature and data into their practice. I look forward to helping teachers implement and assess interventions in their classrooms in order to resolve instructional concerns. Also, I intend to continue supporting teachers’ collaborative spirits as routine parts of their practice. Lastly, I expect to continue exerting my leadership in teachers’ professional development through the avenue of collaborative practitioner inquiry.

More broadly, I will extend my newfound knowledge to the larger community in order to improve teacher-training district-wide. I believe that what I have learned from collaborative practitioner inquiry positively impacts not only my immediate stakeholders of teachers, students, and parents, but is pertinent to the growth and development of educators throughout my district. My inquiry has enabled me to become a better decision-maker, and with my continued leadership at the school and the extension of that leadership to the accomplishment of the
district’s mission, my enhanced decision-making will be a valuable asset in the pursuit of teacher professional development.

I have developed a fresh understanding that inquiry never ceases. The “germ of intellectual curiosity” (Dewey, 1910/2005, p. 28) is now all the more present in my actions, and I intend for it to always reside within me. I intend to continually dig deeper, pose new questions from what I discover, implement new interventions, and measure their outcomes.

Notably, I have defined my professional beliefs better than ever and I sense that now I am better prepared to contribute to a productive educational culture at Desert Sands. When I first became a principal and instructional leader, I wrestled with articulating my educational beliefs. I found it difficult to define the essence of teaching and learning. In a journey that has taken me several years and several cycles of inquiry, the result is a better understanding of myself and who I am as an instructional leader. I now speak with a voice of conviction and purpose in regard to my understanding of inquiry and how inquiry cultivates what is best for Desert Sands students, my staff, and my community. I have learned that with my voice I can shape and direct an organization to bring meaning and purpose to its mission.

**Implications for Research**

This action research should be interpreted in light of several limitations. The study had only five teachers participate in the Action Research PLC, and only
two of those teachers had received the action research professional development. From those five action research participants, I selected three as my focal group to inform my findings. Due to the small number of participants and the design of this action research investigation, it should be understood that I am unable to generalize my findings to other situations. Indeed, I set out to describe this action research with sufficient descriptive detail so other educators could judge for themselves what applied to their local situations.

Because the intervention was new to two of the participants and I was a participant-researcher, there may have been threats to the validity of the study. The newness of action research to two of the participants, and it should be noted that these same participants were a part of the identified focal group, may have created a novelty effect that impacted their responses and interactions with me and within the PLC. To mitigate this effect, I consciously chose a third focal group member who had a broader, deeper experience with action research.

An observer-expectancy effect may also have resulted with the participants responding in a manner that they believed would be pleasing to me, maybe even more so because I was the building principal. To minimize this effect, I did not share in advance my research questions and I encouraged teacher leadership and facilitation of the PLC. In meetings I deemphasized my role as supervisor and emphasized my position as fellow action researcher and colleague.
As I was the sole collector and analyst of the qualitative data, I influenced the interpretation of the data. To reduce bias, I directly quoted the participants’ written responses to the open-ended survey items without paraphrasing. Participants were assured they could speak freely within interviews and PLC meetings. Also, I recorded and transcribed the PLC meetings and interviews and made them available to the participants for review. As with the open-ended survey items, I recorded direct quotations without paraphrasing for both the PLC meetings and the interviews.

The initial and final surveys were designed specifically for this study and had not been used nor tested beforehand for reliability and validity. A tested survey with demonstrated reliability and validity would serve to better inform future studies and establish the participants’ baseline understandings of collaborative practitioner inquiry. Additionally, only one participant completed both the initial and final surveys, thereby eliminating the potential to determine participants’ gains. Greater survey participation would enhance the use of the survey and provide for a more informative pre-post quantitative measure.

Personal and collaborative inquiry is in the early stages of becoming a distinctive aspect of Desert Sands’ culture. I have worked diligently to foster a culture of inquiry through professional development opportunities, the Action Research PLC, and being an example to the staff as I continue to grow professionally and disclose this growth. With a culture of inquiry being
established, the stage is set to advance the use of collaborative practitioner inquiry
classroom wide and provide action research professional development to the entire
staff. A promising next cycle of inquiry would ask the question: What does
school-wide implementation of collaborative practitioner inquiry contribute to
teachers’ professional development?

Closing Word

Collaborative practitioner inquiry can provide the means to personalized
professional development embedded within practice and employed directly within
classrooms. The benefit of collaborative practitioner inquiry is the opportunity for
teachers to identify and address a concern within their classroom. One teacher
stated this well when she said, “To think of ways to correct the problem [concern
within the classroom], which always is empowering, feels like you are doing
something about it rather than being controlled by it” (INT.YEL.11-16-10).
Empowering is an incredible descriptor! In a standards-based world in which what
we do in the classroom is becoming all the more prescriptive, empowerment could
be a breath of fresh air for both teacher and student learning.
REFERENCES


<table>
<thead>
<tr>
<th>Week of:</th>
<th>Action</th>
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<tbody>
<tr>
<td>August 2nd</td>
<td>Disseminated professional literature regarding practitioner inquiry, action research, professional learning communities, and embedded professional development to staff via email. Specific article: Darling-Hammond, L., &amp; McLaughlin, M. (1995). Policies that support professional development in an era of reform. <em>Phi Delta Kappan, 76</em>(8), 597-604. Provided Action Research Training (15 hours) – Three days totaling fifteen hours of professional development were completed to create a cohort of teachers trained in action research methods. Schedule of topics were:</td>
</tr>
</tbody>
</table>
Day 1 (5 hours): Definition and purpose of action research, benefits of action research, and formulating the problem.

Day 2 (5 hours): Creating an intervention, data collection, data analysis, and working collaboratively in an action research group.

Day 3 (5 hours): Reporting results and planning for future action.

As part of the training teachers outlined a potential classroom research project, an identified intervention, and created a method of evaluation.

Resources for the professional development included:


Video – Action Research the Classroom Part 1 [http://www.youtube.com/watch?v=MDVH0u4tUWo](http://www.youtube.com/watch?v=MDVH0u4tUWo) and Action Research the Classroom Part 2 - [http://www.youtube.com/watch?v=ZZHvpgU7pc8](http://www.youtube.com/watch?v=ZZHvpgU7pc8)

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>August 9th</td>
<td>Presented to all teachers at a faculty meeting the essential ideas of collaborative practitioner inquiry in order to build upon a culture of teacher learning.</td>
</tr>
<tr>
<td>(Teachers Reported)</td>
<td></td>
</tr>
<tr>
<td>August 16th</td>
<td>The trained teacher cohort implemented their individual projects.</td>
</tr>
<tr>
<td>(School Started)</td>
<td></td>
</tr>
<tr>
<td>August 23rd</td>
<td>The trained teacher cohort continued their individual teacher projects.</td>
</tr>
<tr>
<td>August 30th</td>
<td>The trained teacher cohort continued their individual teacher projects.</td>
</tr>
<tr>
<td>September 6th</td>
<td>The FAC met to evaluate the effectiveness of the group PLCs from the previous year using survey results and/or teacher input from respective departments.</td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
</tr>
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<td>--------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>September 13th</td>
<td>The FAC members sought input from their department members regarding Group PLCs for purposes of identifying PLCs for the school year.</td>
</tr>
<tr>
<td></td>
<td>A teacher from the trained teacher cohort presented to the staff his classroom research project that was created in his professional development.</td>
</tr>
<tr>
<td>September 20th</td>
<td>The FAC met to make a final determination of Group PLCs for the school year.</td>
</tr>
<tr>
<td>October 4th</td>
<td>First Action Research PLC conducted its first meeting for both the trained teacher cohort and new members to the PLC. PLC members defined the purpose of PLC, determined meeting dates, and new members identified a research question for their classroom.</td>
</tr>
<tr>
<td></td>
<td>The Action Research PLC facilitator was identified from among PLC members.</td>
</tr>
<tr>
<td>October 11th</td>
<td>Three members of the Action Research PLC were identified as the focal group in my study for the purpose of answering my research questions.</td>
</tr>
<tr>
<td></td>
<td>Action Research PLC members that were new and not a part of the trained teacher cohort initiated their individual classroom action research projects.</td>
</tr>
<tr>
<td>November 4th</td>
<td>Second Action Research PLC meeting. The trained teacher cohort reported progress of their classroom research and new PLC members identified their research question, intervention, and possible data sources.</td>
</tr>
<tr>
<td>November 29th</td>
<td>Third Action Research PLC meeting. All PLC members reported progress of their classroom research and looked for guidance from PLC participants.</td>
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</table>
Colleagues,

I hope you are enjoying a relaxing summer vacation. In preparation for our return to school and our initial day of teacher professional development, I have attached the article “Embarking on Action Research” by Catherine Brighton. The article is an overview of classroom action research and will provide you background knowledge as we explore collaborative practitioner inquiry this school year. Please read in preparation of our faculty in-service meeting on August 9th. I look forward to seeing you soon.

Sincerely,

Mitch von Gnechten
Principal

References

APPENDIX C

RESEARCH PLAN
<table>
<thead>
<tr>
<th>Week of:</th>
<th>Action</th>
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<tbody>
<tr>
<td>August 9\textsuperscript{th} (Teachers Reported)</td>
<td>Surveyed the trained teacher cohort within the school to determine their understanding and beliefs regarding collaborative inquiry, provided professional development, and individual professional development.</td>
</tr>
<tr>
<td>October 4\textsuperscript{th}</td>
<td>Made entry into my research journal for reflection of the first Action Research PLC meeting.</td>
</tr>
<tr>
<td>October 11\textsuperscript{th}</td>
<td>Identified three members of the Action Research PLC as the focal group in my study for the purpose of answering my research questions.</td>
</tr>
<tr>
<td>October 25\textsuperscript{th}</td>
<td>Conducted my first interview of the three focal group members of my study.</td>
</tr>
<tr>
<td>November 1\textsuperscript{st}</td>
<td>Made entry into my research journal for reflection of the second Action Research PLC meeting.</td>
</tr>
<tr>
<td>November 15\textsuperscript{th}</td>
<td>Conducted my second interview of the three focal group members of my study.</td>
</tr>
<tr>
<td>November 29\textsuperscript{th}</td>
<td>Surveyed the Action Research PLC to determine their understanding and beliefs regarding collaborative inquiry, provided professional development, and individual professional development. Made entry into my research journal for reflection of the third Action Research PLC meeting.</td>
</tr>
<tr>
<td>December 6\textsuperscript{th}</td>
<td>Conducted my third interview of the three focal group members of my study.</td>
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</table>
APPENDIX D

COLLABORATIVE PRACTITIONER INQUIRY SURVEY
This study examines what collaborative practitioner inquiry contributes to teachers’ professional development Desert Sands High School and how my leadership contributes to teachers’ professional development.

The survey will consist of thirty questions that use a four-point Likert scale with 4 indicating strongly agree and 1 indicating strongly disagree and five open-ended questions. Questions relate to the constructs of application of action research, instruction, collaboration, reflection, and impact of provided professional development.

Application of the action research process.

1. As a result of my using action research I understand the importance of applying professional literature to my practice.

2. I can better collect data as a result of implementing action research in my classroom.

3. Doing action research helps me learn how to analyze data.

4. I know how to create an intervention as a result of my use of action research.

5. Action research helps me become a problem solver for issues in my classroom.

Identify an aspect of action research that most impacts your professional development and explain how it does.

Determining the value of collaborative practitioner inquiry to instruction.

6. Use of collaborative practitioner inquiry improves my instructional practice.

7. Doing an action research projects helps me learn how to focus on an area of need within my classroom instruction.
8. I am a more critical thinker about my practices in the classroom as a result of collaborative practitioner inquiry.

9. I make modifications to my instruction as I use collaborative practitioner inquiry.

10. Because I know how to do collaborative practitioner inquiry I am a more effective teacher.

What might be the greatest benefit of collaborative practitioner inquiry to your instruction? Why?

Discovering the impact of collaborative practitioner inquiry on teacher collaboration.

11. Use of collaborative practitioner inquiry improves communication among my peers.

12. Use of collaborative practitioner inquiry results in greater collaboration with my peers.

13. I look for opportunities to share the progress of my collaborative practitioner inquiry intervention.

14. I benefit when other teachers share the progress or results of their collaborative practitioner inquiry.

15. As a result of my collaborative practitioner inquiry I learn effective ways to work with other teachers.

16. I receive feedback from my colleagues about my collaborative practitioner inquiry.

17. Use of collaborative practitioner inquiry has grown my leadership capabilities on campus.

Describe one example of collaboration with your colleagues that resulted from collaborative practitioner inquiry.
Discovering the impact of collaborative practitioner inquiry on teacher reflection.

18. Use of collaborative practitioner inquiry increases the number of reflective conversations I have with my peers.

19. I can better assess the effectiveness of my instruction as a result of collaborative practitioner inquiry.

20. Use of collaborative practitioner inquiry helps me assess the achievement of my instruction goals.

21. I reflect upon my instruction as a result of collaborative practitioner inquiry.

22. I make changes to my instruction as a result of my professional reflection.

23. Implementing collaborative practitioner inquiry helps me learn how to focus on an area of need within my classroom instruction.

Describe one example of how as a result of collaborative practitioner inquiry you may differently reflect on your practice.

Determining the impact of provided action research professional development in teacher preparation of individual classroom action research projects.

24. The action research professional development I received directly benefits my ability to conduct action research.

25. The initial action research professional development I received was sufficient that I could implement an effective action research project.

26. I can conduct additional cycles of inquiry without additional action research professional development.

27. The action research professional development I received was applicable directly to my classroom.

28. The action research professional development I received promoted a deep understanding of the process.
29. Continued training in action research through the PLC benefits my understanding of action research.

30. The principal’s co-facilitation of the Action Research PLC has a positive effect upon my understanding of collaborative practitioner inquiry.

Is there an aspect of the action research professional development you received that you felt was most beneficial to you? If so, what and why do you believe it was most beneficial?
APPENDIX E

SEMI-STRUCTURED INTERVIEW
**Introduction, thank you, and purpose.**

Thank you for your participation in this interview. Please speak freely, I am not here to convince you of anything or try to sway your opinion. My purpose today is to get your opinions and attitudes about issues related to collaborative practitioner inquiry.

I am going to ask a series of prescribed questions, but I may ask follow-up questions to gain clarity to your response.

With your permission I will record the interview in order to make a transcription for analysis. I will provide you a copy of the transcription so you may check its contents for accuracy and provide me feedback.

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Purpose/Context</th>
<th>Interview Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does collaborative practitioner inquiry contribute to teachers’ professional development at Desert Sands High School?</td>
<td>I am seeking descriptive answers from you regarding your use of action research.</td>
<td>Tell me about your Action Research project.</td>
</tr>
</tbody>
</table>
I am seeking descriptive answers from you regarding your personal professional development pertinent to collaboration, reflection, and data use.

Tell me about your current collaboration with other teachers.

Tell me about the manner in which you reflect upon your practice?

Tell me about the manner in which gather and utilized student data.

How do you define “collaborative practitioner inquiry”?

| What does my leadership contribute to teachers’ professional development at Desert Sands High School? | I am seeking descriptive answers from you regarding my instructional leadership. | Tell me what you thought of the action research professional development you received in August. | How has my participation as co-facilitator impacted the PLC? |
Journal Entry #:

Purpose of the Entry:

Date:

Location:

Start and Stop Time:

Researcher Role:

<table>
<thead>
<tr>
<th><strong>Descriptive Notes</strong></th>
<th><strong>Reflective Notes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Detailed, chronological notes about what the observer sees, hears, etc.)</td>
<td>Concurrent notes about the observer’s personal reactions, experiences</td>
</tr>
</tbody>
</table>

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APPENDIX G

SURVEY INSTRUMENT SCORES
<table>
<thead>
<tr>
<th>Construct</th>
<th>Item</th>
<th>Grey</th>
<th>Red</th>
<th>Yellow</th>
<th>Blue</th>
<th>Teal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application of Action Research</strong></td>
<td>1. As a result of my using action research I understand the importance of applying professional literature to my practice.</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
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</tr>
<tr>
<td></td>
<td>2. I can better collect data as a result of implementing action research in my classroom.</td>
<td>3</td>
<td>3</td>
<td>3</td>
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</tr>
<tr>
<td></td>
<td>3. Doing action research helps me learn how to analyze data.</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4. I know how to create an intervention as a result of my use of action research.</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>5. Action research helps me become a problem solver for issues in my classroom.</td>
<td>4</td>
<td>4</td>
<td>4</td>
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</tr>
<tr>
<td>Value of Action Research</td>
<td>3.60</td>
<td>4.00</td>
<td>3.60</td>
<td>3.20</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
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</tr>
<tr>
<td>6. Use of collaborative practitioner inquiry improves my instructional practice.</td>
<td>3.00</td>
<td>4.00</td>
<td>3.00</td>
<td>3.00</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>7. Doing an action research projects helps me learn how to focus on an area of need within my classroom instruction.</td>
<td>4.00</td>
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<td>3.00</td>
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</tr>
<tr>
<td>8. I am a more critical thinker about my practices in the classroom as a result of collaborative practitioner inquiry.</td>
<td>4.00</td>
<td>4.00</td>
<td>4.00</td>
<td>3.00</td>
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</tr>
<tr>
<td>9. I make modifications to my instruction as I use collaborative practitioner inquiry.</td>
<td>3.00</td>
<td>4.00</td>
<td>4.00</td>
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</tr>
</tbody>
</table>
10. Because I know how to do collaborative practitioner inquiry I am a more effective teacher.

<table>
<thead>
<tr>
<th>Impact Upon Collaboration</th>
<th>3.14</th>
<th>4.00</th>
<th>3.71</th>
<th>3.39</th>
<th>4.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Use of collaborative practitioner inquiry improves communication among my peers.</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. Use of collaborative practitioner inquiry results in greater collaboration with my peers.</td>
<td>4</td>
<td>4</td>
<td>4</td>
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<td>4</td>
</tr>
<tr>
<td>13. I look for opportunities to share the progress of my collaborative practitioner inquiry intervention.</td>
<td>4</td>
<td>4</td>
<td>4</td>
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<td>4</td>
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</tr>
<tr>
<td>14. I benefit when other teachers share the progress or results of their collaborative practitioner inquiry.</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. As a result of my collaborative practitioner inquiry I learn effective ways to work with other teachers.</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>16. I receive feedback from my colleagues about my collaborative practitioner inquiry.</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
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</tr>
<tr>
<td>17. I receive feedback from my colleagues about my collaborative practitioner inquiry.</td>
<td>3</td>
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<td>3</td>
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<td>4</td>
</tr>
<tr>
<td>Impact Upon Reflection</td>
<td>3.33</td>
<td>4.00</td>
<td>3.83</td>
<td>3.17</td>
<td>4.00</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------</td>
<td>------</td>
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</tr>
<tr>
<td>18. Use of collaborative practitioner inquiry increases the number of reflective</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>conversations I have with my peers.</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. I can better assess the effectiveness of my instruction as a result of collaborative practitioner inquiry.</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>20. Use of collaborative practitioner inquiry helps me assess the achievement of my instruction goals.</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21. I reflect upon my instruction as a result of collaborative practitioner inquiry.</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

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22. I make changes to my instruction as a result of my professional reflection.  
4 4 4 3 4

23. Implementing collaborative practitioner inquiry helps me learn how to focus on an area of need within my classroom instruction.  
3 4 4 3 4

<table>
<thead>
<tr>
<th>Action Research Professional Development</th>
<th>3.86</th>
<th>4.00</th>
<th>2.86</th>
<th>3.00</th>
<th>3.86</th>
</tr>
</thead>
</table>

24. The action research professional development I received directly benefits my ability to conduct action research.  
4 4 3 3 4
25. The initial action research professional development I received was sufficient that I could implement an effective action research project.

26. I can conduct additional cycles of inquiry without additional action research professional development.

27. The action research professional development I received was applicable directly to my classroom.

28. The action research professional development I received promoted a deep understanding of the process.
29. Continued training in action research through the PLC benefits my understanding of action research.

<table>
<thead>
<tr>
<th></th>
<th>4</th>
<th>4</th>
<th>3</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
</table>

30. The principal’s co-facilitation of the Action Research PLC has a positive effect upon my understanding of collaborative practitioner inquiry.

<table>
<thead>
<tr>
<th></th>
<th>3</th>
<th>4</th>
<th>3</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>TOTAL</th>
<th>3.50</th>
<th>3.93</th>
<th>3.47</th>
<th>3.13</th>
<th>3.87</th>
</tr>
</thead>
</table>

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APPENDIX H
INSTITUTIONAL REVIEW BOARD APPROVAL
The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(1) (2) (4).

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.