

A DAY IN THE PARC: AN INTERACTIVE QUALITATIVE
ANALYSIS OF SCHOOL CLIMATE AND TEACHER
EFFECTIVENESS THROUGH PROFESSIONAL ACTION RESEARCH
COLLABORATIVES

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Abstract

This study examines the effects Professional Action Research Collaboratives (PARCs) have on several variables including teacher effectiveness, school effectiveness, and school climate. Mixed methods including Interactive Qualitative Analysis and non-parametric Mann Whitney U statistics were used to explore these effects. PARC participation was found to have no significant effect on school climate or teacher effectiveness; however, PARC Schools demonstrated higher school effectiveness scores than Comparison Schools. This project also generated a systems relationship diagram of school climate in PARC schools using Interactive Qualitative Analysis, and this paper offers a criticism of this fledgling method of data collection and analysis. There are, to this date, no published studies utilizing the IQA method. Although IQA is ultimately a detailed and time-consuming undertaking, the process is supported by detailed organization, supportive data collection and analysis tools, and methodological rigor. These characteristics make IQA an attractive choice for new researchers in need of a guided method of analysis, or researchers with quantitative leanings who may face a qualitative research question. Several limitations to IQA were uncovered during the extent

of this study. Most of these limitations, such as unfamiliar jargon and unusual methods of data collection and analysis, are to be expected with the introduction of new methods and an accompanying vocabulary and will subside with utilization of the methodology.

Chapter 1 Introduction

Recent political trends declare that holding teachers, schools, and students accountable for the success of American public education will improve the performance of US public schools ("Paige Joins," 2002). The public focus on school accountability high-stakes testing and research-based teaching methods has led to a drive for more effective professional development for classroom teachers (Holloway, 2003; Huffman and Hipp, 2003).

According to the No Child Left Behind Act of 2001 (NCLB), teacher professional development should meet stringent criteria so that participating teachers earn credit towards "Highly Qualified" status ("Paige Joins", 2002). For many schools, the answer to this professional development challenge is the Professional Action Research Collaborative.

What are PARCS?

Professional Action Research Collaboratives (PARCs) are types of faculty-driven professional development programs consisting of a circular pattern of group practice review.

Collaborative action is rooted in the processes and procedures of democratic participation. It breaks down teacher isolation and questions the conventional wisdom of individualism and privacy that characterizes many schools and classrooms. (Sachs, 2003, p. 117)

PARCs are currently known by many names, some of them trademarked, but all centered on themes of professional development, shared-decision making, action research, and teacher collaboration and team building. PARCS in the literature are referred to as "Whole Faculty Study Groups (WFSG) (Murphy and Lick, 2000; Lick, 2001)," "Professional Learning Communities (PLC) (Eaker and DuFour, 1998; Eaker, DuFour, and DuFour, 2002)," "Teacher Action Research Groups," "Action Research Collaboratives" and many other permutations of the words *professional*, *action research*, *learning*, *groups*, and *communities*.

Components of the PARC

For purposes of this study, a PARC school is defined by the following characteristics:

- Shared decision- making, including teachers' volunteered participation in the PARC
- Teacher collaboration in action research, including the cycle of learning, applying, sharing, and revising techniques and methods
- Information and practice sharing, including collaborative meetings and planning; also including the opportunity to model lessons and observe other teachers
- Shared mission or vision for the school

Types of PARCS

The following section describes different types of PARCS common to schools.

Whole Faculty Study Groups (WFSG)

The WFSG process is a circular progression beginning with the identification of student needs (Murphy and Lick, 2001). In groups, teachers then review current literature from district, state, and national agencies and investigate effective instructional practices and materials. Teachers next demonstrate and practice effective methods and design lessons and materials.

Teachers use the new and refined methods and materials in their classrooms with their students. The students are then assessed and the process begins anew with students' new needs being identified.

ATLAS Schools

The PARC process was implemented nationally through Authentic Teaching, Learning, and Assessment for All Students (ATLAS) communities in the form of Whole Faculty Study Groups (WFSG). Squires and Kranyik (1999) conducted case studies of two ATLAS schools. They found instruction and management need to work together for reform efforts, such as ATLAS be successful. Researchers also found that

the ATLAS model showed promise as a template for producing improved educational outcomes.

Professional Learning Communities

DuFour and Eaker (1998) describe characteristics of successful learning communities. These include shared mission, vision, and values; collective inquiry; collaborative teams; orientation toward action and willingness to experiment; commitment to ongoing improvement; and a focus on results. These characteristics are similar to the requirements of the WFSG process and are used in conjunction with the WFSG process in Louisiana's LINCS (Learning Intensive Networking Communities for Success) program.

Hybrid Programs

Many PARCs are hybrid combinations of other, well-known programs such as WFSGs and PLCs. This is a reflection of individual schools, districts, or states adapting the most applicable characteristics of large programs or theories to meet specific needs.

LINCS

The LINCS program, currently implemented throughout the state of Louisiana, is a comprehensive school reform effort based on the Whole Faculty Study Group (WFSG) model of professional development described by Murphy and Lick

(2000). Louisiana's school reform effort draws from the Professional Learning Community model in addition to the WFSG. Teachers use the WFSG to conduct action research for improved student outcomes, but also focus on increasing their personal knowledge in their content areas.

LINCS schools receive a base stipend for participation in the program and additional monies depending on enrollment amounts. Schools wishing to participate in LINCS must complete a comprehensive application including letters of support from district and school administrators and documentation showing at least 80% faculty buy-in.

LINCS schools are assisted by a school or district Content Leader and a Regional LINCS coordinator. Faculty meet twice monthly for study groups focusing on the chosen content area and professional development. Teachers are also encouraged to view model lessons from Content Leaders and Regional Coordinators and to be observed by other faculty members as well as LINCS support staff.

Schools joining LINCS are required to have a Louisiana School Performance Score (SPS) of 60 or lower, but some third- and fourth-year LINCS schools have raised their SPS to over 100. Policy makers for the State Dept. of Education are currently working out a plan to "graduate" LINCS schools into the TAP program described next when the

LINCS School no longer needs the level of support the LINCS program provides.

Louisiana Teacher Advancement Program (TAP)

TAP is currently implemented in five Louisiana schools. It is a part of the National Teacher Advancement Program funded and monitored through the Milken Family Foundation. This program affords teachers career options and the opportunity for financial awards based on teaching performance. The heart of the program is the Cluster Groups, which provide collaboration, action research, and professional development to TAP teachers. Teachers meet in grade level clusters twice a week to review student work and discuss research concerning teaching practices and classroom techniques.

Any school wishing to participate in the TAP program is allowed to become a TAP school. Although TAP schools receive state support in the form of training and professional assistance, these schools receive no additional funding for TAP participation.

Common to all PARCS is the placement of the teacher in a researcher role. Teacher Action research in the context of professional development will be discussed next.

Action Research

The concept of Teacher Action Research has become popular in recent years (Sachs, 2003). The American Education Research Association boasts Special Interest Groups in both Action Research and Teacher Research. Action Research is a process by which teachers conceptualize new or improved teaching methods, use the methods in the classroom, and then critique and refine the methods for future use or to share with others. According to Sachs:

Action research has often been the preferred methodology for teacher research because it aims to give teachers practical methods to develop knowledge from their experience and to make a contribution to the shared knowledge of the profession... Within school contexts, action research can be seen as a potent means of facilitating teacher involvement in change initiatives occurring in their own schools as well as validating teachers' theories in practice. (2003, p. 81)

Statement of Purpose

The purpose of this study is to investigate the effects of Professional Action Research Collaboratives on teacher effectiveness and school climate outcomes. *Such research is necessary because there have not been intensive studies on such hybrid PARCs as the LINCS program and the effects of such hybrids on teacher behavior have not been explained.* While previous studies (Eaker, DuFour, and

DuFour, 2002; Huffman and Hipp, 2003) have indicated that PARCs have a positive effect on school culture, this study investigates teachers' attitudes toward their profession as well as compares the teacher behaviors and school culture in PARC as opposed to Comparison Schools. This study also compares school effectiveness of PARC v. Comparison Schools.

Research Hypotheses and Research Questions

The study will address three research questions and three research hypotheses.

Research questions include:

- How does school climate affect teacher effectiveness in PARC schools?
 - Does school climate affect teacher performance similarly in LINCS Schools, TAP Schools and Comparison Schools?
- Do the interview data substantiate the hypothesized relationship system created by the focus group IQA exercise?
 - How are the interview results supportive or contradictory to the focus group results?
 - What are the advantages and disadvantages of using IQA in a Mixed Method study?

These questions will be answered through interviews with WFSG participants and through the analysis of survey, interview, and observation data.

Hypothesis one states that:

- Schools participating in PARCs will demonstrate greater effectiveness than comparison Schools.

School effectiveness will be measured by collecting individual School Performance Scores assigned to schools by the Louisiana Dept. of Education.

Hypothesis two is that:

- Teachers in schools participating in PARCS will demonstrate higher levels of teacher effectiveness than teachers in Comparison Schools.

This will be measured by comparing Louisiana Components of Effective Teaching scores.

Hypothesis three states that:

- School climate in PARC Schools will be more positive than school climate in Comparison Schools.

School climate in PARC and Comparison Schools will be measured using the School Climate Scale from the National Educational Longitudinal Study (1988) to determine if WFSG

schools demonstrate more positive school climate than Comparison Schools.

Significance of the Study

This study will be a significant contribution to Professional Development Research for several reasons. The first reason is that this study aims to establish the links between PARCs and school climate. This relationship has been suggested through narratives (Hoban and Hastings, 1997; Slick, 2002), but has not yet been established through comparison of PARC schools and Comparison Schools.

This study also provides an in-depth exploration of the effects of PARCS on teachers' professional satisfaction. This information may be useful to school systems experiencing problems with teacher retention.

In addition, this study tests the inference quality of a new method of qualitative inquiry and analysis, IQA (Interactive Qualitative Analysis). IQA has not yet been established as a widely accepted means for conducting qualitative research, since published studies employing IQA have not been found as of this time. This study serves as one of the preliminary examinations of this fledgling methodology.

Interactive Qualitative Analysis

In addition to the aforementioned research questions and hypotheses, Interactive Qualitative Analysis (IQA) also drives this study. IQA attempts to uncover the workings and relationships of social systems with the analytical assistance of the research participants (Northcutt and McCoy, 2004). Northcutt and McCoy (p.41) state, "The product of an IQA study is a visual representation of a phenomenon prepared according to rigorous and replicable rules for the purpose of achieving complexity, simplicity, comprehensiveness, and interpretability." This study not only creates such a visual representation of school community within PARC schools, but attempts to validate the diagram with additional data sources such as observations and surveys.

The IQA process can be compared with the Quantitative process of Structural Equations Modeling (SEM). Both methods use graphical representations to organize a system of latent variables. In this light IQA might be used in a qual/QUAN as a precursor to SEM in the form of a pilot study for selecting variables. IQA might also be used to confirm or expand upon SEM results in a QUAN/qual study (Teddlie and Tashakkori, 1998).

Mixed Methods

This research project employs a Mixed Methods approach. Mixed Methodology involves the combination of qualitative and quantitative methods within phases of a study (Tashakkori and Teddlie, 2003a, 1998; see also: Bazely, 2002; Meijer, Verloop, and Beijaard, 2002; Sale, Lohfeld, and Brazil, 2002; Tashakkori and Teddlie, 2003b). The presence of both research questions and hypotheses in this study dictates the use of mixed methods (Tashakkori and Teddlie, 1998, 2003a, 2003b). In addition, this study calls for the collection and analysis of both quantitative and qualitative data; utilization of mixed methodology facilitates this process.

Operational Definitions

The use of a new technique for qualitative data gathering and analysis necessitates the adoption of a new language of research terms. The following list defines the most important terms referenced in this study.

Affinity- sets of textual references that have an underlying meaning or theme (Northcutt and McCoy, 2004, p.81).

Affinity Relationship Table (ART)- protocol used to document the hypothesizing activity of the focus group (Northcutt and McCoy, 2004).

Axial Coding- focus group activity in which affinity clusters are named, reorganized, clarified, and refined through group discussion. This results in affinity titles that accurately reflect the meaning of the affinity (Northcutt and McCoy, 2004, p.98-99).

Concurrent Triangulation Approach- Type of mixed methods study in which QUAN and QUAL phases of the study are conducted simultaneously. Results of both phases are used in conjunction to draw inferences about the phenomena under study (Creswell, et. al., 2004).

Democratic Protocol- majority vote method used in the focus group to determine the direction of each relationship in the hypothesizing activity (Northcutt and McCoy, 2004, p.163).

Driver- cause or source of influence in the system

Inductive Coding- focus group activity in which data are clustered into thematically organized groups (Northcutt and McCoy, 2004, p.98).

Interrelationship Diagram (IRD)- a matrix that contains all the perceived relationships in the system (Northcutt and McCoy, 2004, p.170).

Interactive Qualitative Analysis (IQA)- The purpose of IQA is to draw a picture of the system that represents the perceptual terrain or the "mind map" of a group with

respect to a phenomenon represented by the issue statement (Northcutt and McCoy, 2004, p.149).

Issue Statement- Opening sentence used in a focus group discussion to introduce the topic or situation to be discussed.

Notes- initial responses to issue statements listed on individual sheets of note paper during the

Outcome- end result or element influenced by drivers in a system

Pareto Protocol- A statistical method for representing the consensus or "preponderance" of the group's analysis of relationships (Northcutt and McCoy, 2004, pp. 156-161)

Qualitizing- The process of converting Quantitative data into narratives that can be analyzed qualitatively (Tashakkori and Teddlie, 1998, p.126)

Quantitizing- The process of converting qualitative information into numerical codes that can be statistically analyzed (Tashakkori and Teddlie, 1998, pp.125-126)

School Climate/ School Community- The atmosphere of a school encompassing its mission, vision, values, focus, and relationships among students, teachers, faculty, staff, parents, and community (Eaker, Dufour, and Dufour, 2002). School Climate is measured by sub-

questions of the Teacher Survey of the National Educational Longitudinal Study follow-up, 1990 (Taylor and Tashakkori, 1995).

School Effectiveness- Progress of a school towards achieving accountability goals as measured by Louisiana School Performance Scores. School Performance Scores are computed each school year from standardized test data and school attendance. Schools may receive rewards based on these scores.

Silent Nominal Technique- activity in which focus group participants respond to issue statements by silently brainstorming words and phrases onto cards which is used in the creation of affinities (Northcutt and McCoy, 2004)

System Influence Diagram (SID)- visual representation of an entire system of influences and outcomes and is created by representing the information present in the IRD as a system of affinities and relationships among them (Northcutt and McCoy, 2004, p.174).

Teacher Effectiveness- the quality of a teacher's classroom instruction measured by observed planning, management, and instruction behaviors as indicated by the Louisiana Components of Effective Teaching Domains and Components.

Theoretical Coding- the process of ascertaining the perceived cause and effect relationships (influences) among all the affinities in a system. All possible direct links between the affinities are investigated by developing hypotheses grounded in the data (Northcutt and McCoy, 2004, p.149).

Theme- an over-arching concept describing or defining a set of ideas.

Chapter Summaries

Following this introductory chapter is a review of the literature. The review frames the Professional Action Research Collaborative within Professional Development, Professional Collaboration, and School Climate research. This chapter also presents a summary of current Teacher Effectiveness and School Effectiveness findings. Chapter Three explains the sampling design, Instrument selection and validation, data collection, and data analysis procedures to be used in the study. Chapter Four gives a detailed account of the IQA focus group process as utilized in a pilot study for this research project. The last three chapters provide a detailed account of the study results as well as implications of the findings.

Chapter 2 Literature Review

The following chapter presents an examination of the current literature on Professional Action Research Collaboratives and other literature relevant to the present study. This chapter is organized into the following sections:

- I. Professional Development
- II. Types of PARCs
- III. Professional Development and Comprehensive School Reform
- IV. School Climate
- V. Professional Satisfaction
- VI. Action Research and Professional Development
- VII. Mixed Methods, Qualitative Data Analysis, and Interactive Qualitative Analysis (IQA)
- VIII. Chapter Summary

Professional Development

Goals of most professional development programs described here include improved student outcomes and improved teacher professional attitudes. This study examines a particular type of teacher professional development intended to reach those goals. The following studies examine how professional development works to change both outcomes and attitudes for those involved.

Teacher Change

Researchers cite the failure to treat schools as a place for teacher learning as a reason for disappointments of past school reform efforts (Guskey & Huberman, 1995; Sarason, 1990). Smylie (1995 pp.104-107) promotes several conditions that should be present in redesigned schools to positively ensure teacher learning outcomes. Implications include: teacher collaboration, shared authority, and variation, challenge, autonomy (Atherton, 2005), and choice in teaching. Many of these conditions are required in the PARC professional development model.

Clark (1992) suggests that the most effective professional development for teachers is self-directed. The reasons behind his argument seem obvious to those familiar with traditional "sit-and-get" workshops. First, teachers are adults and adult learning is voluntary. Second, since teachers are unique, each teacher's professional development needs are different and should be treated as such. Finally, Clark contends that teachers are intrinsically self-directed and capable of designing their own development and growth.

Guskey (2002) proposed a model of teacher change that describes a process beginning with professional development and ending with change in teachers' beliefs and attitudes.

He contends that professional development programs that seek to change teachers' beliefs are doomed to failure because teachers' attitudes will change only after student outcomes improve. Guskey's model states that professional development, which leads to change in teachers' classroom practices, will then result in change in student learning outcomes and change in teachers' beliefs. He states that only successful implementation, not the professional development itself, will lead to improved outcomes and attitudes (p.383).

Professional Development and Teacher Effectiveness

This study is based on an assumption that teacher professional development, if properly designed and disseminated, should improve teacher effectiveness in the classroom. Guskey and Huberman(1995) state, "Regardless of how schools are formed or reformed, structured or restructured, the renewal of staff members' professional skills is considered fundamental to improvement"(p.1).

The traditional isolation of teachers from professional development design has been found to reduce teacher effectiveness in the classroom (Cwikla, 2003.)

When teachers are left out of the planning process and design of their own professional learning environment and the accompanying learning goals, people other than teachers are determining teachers' needs, weaknesses, and strengths. This compounded with the isolation that teachers experience in their classroom practice and

school setting makes it difficult to provide professional experiences to support teachers' needs because a forum for communication of their needs is not provided (Cwikla, 2003, p.52.)

Professional Development and School Climate

Many researchers agree that when teachers learn from and with one another a positive culture or climate towards learning is created in the school (Finnan, Schnepel, & Anderson, 2003; Guskey, 1995; Hargreaves, 1992; Phillips, 2003; Shulman & Sherin, 2004).

Grotsky and Gamoran (2003) examined the relationship between teacher professional development and professional community in schools. They hypothesized that school-based professional development contributes to a feeling of community within the school. The authors used hierarchical linear modeling to analyze data from the 1993-1994 Schools and Staffing Survey, which represented over 500,000 teachers across the US. Grotsky and Gamoran found positive effects of professional development on feelings of community at both school and teacher levels. They suggest that teachers benefit from their own professional development participation and the participation of their colleagues.

The literature reported here indicates that quality professional development is an important precursor to both

teacher effectiveness and student achievement. The following section examines different manifestations of a particular style of professional development, the PARC, which is the focus of the present study.

PARCs: Collaborative Planning, Learning Communities, Study Groups, and Others

As mentioned in the previous chapter, Professional Action Research Collaboratives are reported under many titles in the literature. The following is a summary of PARCs as represented by individual titles and nuances.

Collaborative Inquiry Groups

Bray (2002) initiated multiple collaborative inquiry groups within a single school in an attempt to facilitate professional development and improve practice. Participants included twenty-three teachers in a rural K-12 public school. Six groups formed, each around a specific inquiry question. Topics included improving practice, incorporating technology into the classroom, and improving school culture among others. Groups in this study had no formalized interaction, but met for one academic year in cycles of action and reflection. Bray found teachers were invigorated at their efforts of self-improvement. He also found teachers who were previously isolated created a network of interaction. Teachers' classroom behaviors

changed, and the school's structure and culture also changed.

Gingold (2004) described a PARC in a New York school district. She explained how the teachers met on Saturdays as a "Collaborative Planning Team." During the week, the teachers would correspond by email to discuss, evaluate and reform their lesson plans. Over the summer, the teachers met to map out the next school year. Gingold found this team was beneficial to teachers, students and the administration, "[the teachers] avoided mistakes by working together... Their planning has served as a model for their colleagues."

Knowledge Communities

Olsen and Craig (2001) define "knowledge communities" as, "safe, storytelling places where educators narrate the rawness of their experiences, [and] negotiate meaning for those experiences (Olsen and Craig, p.670)." Through case studies of a pre-service and a veteran teacher, the researchers found that knowledge communities can serve to bring about the sort of changes that are resisted by teachers when presented in traditional professional development settings.

Professional Learning Communities

Pankake, Huffman, and Moller (2004) synthesized findings of numerous studies on Professional Learning Communities (PLCs). They found schools engaging in PLCs exhibited similar characteristics. These characteristics include: sharing authority, sharing information, collaborative problem solving, and peer visits and observations. The researchers suggest the creation of a Professional Learning Community Assessment would help schools to guide their efforts in becoming a successful PLC.

School Leadership Teams

Chrispeels, Castillo, and Brown (2000) examined predictors of successful School Leadership Teams (SLTs). An SLT is described as a teacher-led component of school management focused on curriculum and school reform. Researchers analyzed surveys from 142 SLTs in California. They found strong professional relations were a predictor to other positive relations. Researchers also concluded that parent and student participation in team meetings was both an asset and a strain.

Study Groups

Arbaugh (2003) acted as participant, facilitator, and researcher in her evaluation of a high-school math faculty

study group. The study group met twice a month from October to March of the following year. Group activities included finding and sharing tasks requiring high levels of cognitive effort; discussing implementation of those tasks; learning about lesson-enhancing technologies; and reading pedagogical articles.

Arbaugh interviewed study group participants at the end of the school year. Participating teachers listed the following benefits of the study group experience: sharing, discussing and receiving feedback on the usefulness of materials and resources; discussing levels of tasks, questioning, and classroom discourse; and sharing points of view on methods of teaching, increasing student performance, and dealing with student problems. The participants also offered suggestions for teachers interested in starting their own study groups.

With current political and social attention focused on the performance of American schools, many states are implementing comprehensive school reform efforts. In the state of Louisiana, one of these efforts focuses on professional development in the form of faculty study groups and learning communities. The Learning Intensive Networking Communities for Success process (LINCS) is a program funded in part by an 8(g) grant. This program is

aimed at school improvement through professional development.

LINCS, in its current form, has been in place in selected Louisiana schools for three consecutive years. Each year, more schools are added to the program. As part of the grant requirements, outside investigators have evaluated LINCS each year (Noell & Gansle, 2003, 2004). These evaluations consist of quantitative comparisons of school performance from year to year, and between LINCS and Comparison Schools. Classroom observations, teacher-made tests, teacher content knowledge surveys, lesson plan evaluations, and standardized test scores were used to measure program effectiveness. Findings from these evaluations included increased student test scores, increased lesson quality, and increased teacher content knowledge.

TAP Cluster Groups

Another program featured in the state of Louisiana is the Louisiana Teacher Advancement Program (TAP). TAP provides options to teachers in terms of advancement opportunities and career paths. Currently in place in five Louisiana schools, TAP works under the Milken Family Foundation to provide professional development and financial support to those schools. An integral part of

the TAP program is the faculty cluster meeting. In these meetings teachers meet on grade level and follow program procedures to discuss and reinforce research-based teaching practices. Part of the cluster time is allowed for review of student work and for teachers' sharing classroom experiences of the methods being discussed (K. Davison, personal communication, October 15, 2004).

In addition to the studies discussed above, many schools have adopted the PARC format for professional development meetings. The PARC format has become popular in schools due to the reported successes of programs such as those listed above. Since these locally-created groups are not associated with researched programs and, thus, not subjected to proven protocols or evaluation, these groups are not included in the present study.

Professional Development and Comprehensive School Reform (CSR)

The advent of federal accountability pressure has led many states to embrace the CSR movement. The issue is also politically charged, with candidates vying for the distinction of having the "most focus on education." CSR takes the stance that changes in student outcomes result from changes throughout the education experience.

The National Clearinghouse for Comprehensive School Reform defines CSR as "a powerful strategy schools can use

to redesign themselves and increase the academic achievement of their students.” Both PARC programs in the focus of this study (LINCS and TAP) are considered to be CSR programs due to their 80% to 100% faculty buy-in requirements and their spotlight on “whole-faculty” change.

Research shows that teacher development, shared vision, and collaboration are essential components of successful school reform (Finnan & Meza, 2003; Goldberg & Morrison, 2003; Kilgore & Jones, 2003; Phillips, 2003). McChesney and Hertling (2000) reviewed additional characteristics of and challenges to most popular CSR programs. Characteristics include: promoting high standards for all children; addressing all academic subject areas and grade levels; having a research base and be research-tested; sharing a focus on common goals; including professional development; aligning all resources across grades and subject areas; facilitating parent and community involvement; having a proven record for improving student achievement; and having the support of faculty, staff, and parents. Challenges include: sustaining programs past the initial enthusiasm; creating a common vision among people of different beliefs and values; leadership abilities; schools ability to choose program, or lack of such ability;

issues of outside assistance; and the nature and work load of the program itself.

Hatch (2000) examined evaluations of the original 11 CSR Designs supported by New American Schools, formerly the New American Schools Development Corporation). Hatch suggests these designs may not be as promising as first assumed, and sites evidence from the evaluations and his personal experience with ATLAS Schools (one of the selected teams.) He predicts that the inability of these designs to produce large-scale improvements in short periods of time may lead to unwarranted conclusions that the programs are failing. This threat is most likely when programs are adopted without serious consideration as to the extent of work that will be required of the school. In addition, programs may be implemented on top of other reform initiatives already in place, a factor that may confound results. Hatch also warns of a potential backlash against the Comprehensive School Reform movement and Title 1 programs if results are not up to expectations.

CSR studies have close ties to both School Effectiveness and Teacher Effectiveness literature due to the expectations that CSR will have positive effects on school and teaching characteristics. In the following

sections both school effectiveness and teacher effectiveness studies are discussed.

School Effectiveness

Just as this study assumes teacher behavior can be improved through professional development, school effectiveness researchers work under the assumption that schools can make differences in student learning (Teddlie & Reynolds, 2000; Teddlie & Stringfield, 1993). Among the processes of school effectiveness, Teddlie and Reynolds (2000) describe effective leadership, positive school culture (including learning communities p.148), and staff development.

Luyten (2003, p. 31) studied research literature to find, "To what extent do differences in effectiveness between teachers within schools outweigh the differences between schools?" His meta-analysis concluded that numbers of studies indicate that the variance between parallel classes (teacher effectiveness) outweighs the school level variance (school effectiveness). However, an equal number of studies indicated the opposite. This indicates that studies on effectiveness and school reform should take both school and teacher variables into account.

In an International school effectiveness study, Teddlie, Reynolds, Creemers, and Stringfield, (2002) found

“universal” characteristics of school effectiveness. Among these are, instructional style, expectations for students, principal leadership, and school goals. The researchers also note that one particular school effectiveness characteristic- “inter-staff relations” was new to the school effectiveness literature and was worthy of future study (p. 270). Inter-staff relations are an important component of the school climate variable to be examined in the present study.

Other school effectiveness studies focus on student variables and outcomes rather than teacher effects. Using multi-level statistical techniques, Griffith (2002) studied the relationships of academic performance, belonging, and aspirations to measures of school quality. Griffith surveyed 11,573 students representing 31 middle schools. He found that some indicators could be represented as school level phenomena, but the amount of variance explained by school membership was small. He writes, “For example, students’ sense of belonging may likely develop by how respect and instruction are revealed to students, such as in classrooms” (Griffith, 2002, p. 91). He suggests future studies consider grouping of students within the school to determine school effectiveness measures.

Gullatt and Ritter (2000) studied accountability and school report card measures from each of the 50 United States. They contacted each state's Department of Education to find information about state reform efforts, methods of assessing local school effectiveness, rewards and sanctions used to promote school effectiveness, and information about accountability measures affecting non-public schools. They found that all states reporting school performance scores use measures of attendance and standardized test scores to score schools, but no two states report the same information in the same format.

Teacher Effectiveness

The literature consistently demonstrates a significant relationship between measurable classroom teaching behaviors and student achievement (Biddle, 1964; Flanders, 1964; Brophy & Good, 1986; Hargrove, Walker, Huber, Corrigan, & Moore, 2004; and Stallings, 1980). The literary links between school effectiveness research and teacher effectiveness research, however, call for academic attention (Teddlie & Reynolds, 2000)

Guskey (2001) designed a study to investigate teachers' attributions of effectiveness after receiving and implementing staff development training. He selected 96 urban middle- and high-school teachers. Forty-six teachers

participated in a fifteen-hour workshop on mastery learning. Before and six months after the training, teachers completed a survey of factors possibly related to the teacher's classroom teaching effectiveness. Results indicated that after implementing mastery learning techniques in their classrooms, teachers were more likely to attach greater importance to behavior factors in explaining teaching effectiveness and less likely to attribute effectiveness to personality factors.

In an investigation of the links between teacher learning and teacher effectiveness, Munro (1999) monitored the performance of thirty-two secondary school teachers. The teachers participated in professional development stressing reflective study of the learning process. Munro measured teacher effectiveness with three variables: display of effective teaching behaviors, changes in perceived ability to facilitate learning, and changes in student performance. The analysis indicated that the teachers' exploration of the learning process had a significant impact on effective teaching behaviors.

Kyriakides, Campbell, and Christofidou (2002) criticize the traditional idea of teacher effectiveness, arguing that it focuses on student cognitive outcomes while ignoring teachers' other, broader, roles and

responsibilities in the education of students. Kyriakides and colleagues used a participant analysis method to have teachers generate effectiveness criteria in a focus group. They next submitted the criteria to a larger group of teachers to measure agreement.

The teachers in the study agreed on seven characteristics of effective teachers: Goals and Intentions, instilling intrinsic motivation to learn; Individualism, adjusting teaching to students' needs; Love for children, treating students with respect; Professionalism, such as planning and self-evaluation; Collective responsibility, in the form of collaboration with other teachers and parents; Personal Traits, like enthusiasm and creativity; and Responsiveness to change, including participation in action research (Kyriakides, et. al. 2002, pp. 307-309).

Muijs and Reynolds (2000) studied both teacher effectiveness and classroom organization as part of a study on a British math intervention program. Data for 2,128 students and 78 teachers in grades 1, 3, and 5 were collected. Teacher behaviors were assessed with the use of a classroom observation instrument. Data were analyzed using multi level modeling techniques. Findings indicated that teacher behavior variables explained 60% to 100% of

students' math scores. Time spent teaching the whole class was linked to effective teaching and indirectly linked to student outcomes. The researchers use this finding to assert that active, whole class teaching is the most beneficial teaching style for improving student learning.

School Climate

The following studies define and describe school climate, school culture, and school community. Although used separately in the literature, these three terms are considered synonymous in the present study. School Climate is often strengthened through professional development or CSR measures (Finnan, Schnepel, & Anderson, 2003; Hargreaves, 1993). Teddlie, Kirby and Stringfield (1989) found climate variables such as shared academic leadership, strong faculty cohesiveness, cooperative efforts to enhance teaching, uniform teaching behaviors, and assistance for new faculty were present in more-effective schools. School climate literature is explored here as a result of the predicted positive effects of PARCS on that phenomenon.

Strahan (2003) conducted case studies at three schools that improved low-income and minority student achievement. Research teams collected demographic data, interviewed teachers and administrators, and observed lessons and meetings at each school. Strahan describes how action

research helped to develop a school culture that promoted positive outcomes:

Once they had identified priorities for school improvement and initiated conversations about instruction, teachers and administrators at these schools used data from formal and informal assessments to target areas for improving teaching. They then initiated school-based professional development to identify and enact more effective instruction. As students became more successful, participants shared stories of their success, a dynamic that molded teachers into a stronger professional learning community. Over time, these communities developed a cultural stance that communicated expectations and values to new teachers and to new students (p. 142).

Johnson, Snyder, Anderson, & Johnson (1994) reviewed a work culture productivity model with aims at developing an instrument to measure school/work culture. Their School Work Culture Profile was administered to 925 educators in the state of Florida. This survey measured constructs related to school-wide planning, professional development, program development, and school assessment. The authors recommend focusing school efforts around four sets of work culture features. These features center on continuous improvement, human resource development, strategic planning and accountability, and collaboration.

Anderson and Pellicer (1998) studied four successful schools in terms of standards, school culture, curriculum and teaching. Interviews and observations were conducted at each school and written documents were analyzed. The

researchers found all four schools characterized by shared leadership, community support, and hard-working teachers. Each of these factors was used to explain school culture within these schools. The authors report building-level leadership, staffing, and image are critical to school culture.

Shared decision making was also an important factor in the school culture of a steadily improving elementary school studied by Strahan, Carlone, Horn, Dallas, and Ware (2003). The authors conducted interviews and observations at an elementary school over two years. They found the shared-decision making of administration and faculty strengthened instructional norms, which in turn promoted student engagement and higher levels of cooperation. Strahan and colleagues also give credit to other school culture characteristics, such as grade-level planning meetings and site-based staff development for sustaining school renewal and student accomplishment.

Professional Collaboration

One benefit of the study group experience is the opportunity for collaborative planning. Collaboration can be beneficial to teachers in forms beyond the PARC such as partnerships, and peer-coaching relationships. Russell and Flynn (2000) describe a continuum of collaboration spanning

from a partnership between two individuals or organizations communicating informally towards a specific goal to a formal, contractual relationship.

Lockard (2001) describes the use of technology as both an agent used to enhance professional development and student achievement, and as a tool for collaboration among teachers, principals, and district administrators. The collaborative planning activities include a technology committee that serves as a faculty study group, staff development directly related to support and implementation of instructional objectives, and online curricula provided by NovaNET, which serves as an online tutor for each student. Use of collaborative planning is credited with raising the graduation rate of one particular Texas alternative high school from 26 to 126 students over three years.

A 7-month quasi-experimental study of peer coaching (teacher collaborative inquiry to plan, demonstrate, and practice new teaching methods) measured gains in teacher learning, performance, and moral judgment in teachers participating in a "Learning Teaching Framework" (LFT). Reiman and DeAngelis Peace, (2002) found teachers in LFTs focused more on students and less on themselves than teachers in the control group. The researchers assert this

finding is important because teachers who are "pre-occupied with self-concerns will not be attending to the needs of the learner (Reiman and DeAngelis Peace, p.61)."

In a case study of the University of Missouri-St. Louis School of Education Schmitz, Baber, John, and Brown (2000) describe how collaboration, partnerships, and community-building were used to restructure the teacher education program. The focus of the program, called the 21st Century School of Education, required educators to design programs meeting four specific criteria. Programs were required to (a) be field based, (b) be technology rich, (c) promote lifelong learning, and (d) stress collaboration. The researchers found that when initial problems of mistrust were overcome, individual change and community change were tied through experiences of learning, action, and reflection.

Professional Satisfaction

In a study of the reasons teachers give for leaving the teaching profession, Tye and O'Brien (2002) surveyed 114 teachers. Respondents were veterans of teaching, with experiences ranging from 6 to 10 years in the classroom.

The researchers found:

Evidence that they are weighing the costs and questioning their desire to continue working as classroom teachers, that they are feeling alienated, and that they tend to turn their criticism upon

themselves rather than upon the system in which they feel trapped (p. 30).

The authors gave suggestions for improving working conditions in schools as a means of retaining teachers. Suggestions included increasing teachers' responsibility for educational decisions and fostering collegial relationships among teachers and school leaders, among others. These suggestions are consistent with the goals of many PARCS, suggesting a link may exist between participation in PARCs and increased teacher professional satisfaction.

Lee, Dedrick, and Smith (1991) conducted an HLM analysis using data from the original High Schools and Beyond Survey. 8,488 teachers from public and Catholic schools were included in this sample. The authors used school- and teacher-level data to examine the relationship between school organizational characteristics and the self-efficacy and professional satisfaction of classroom teachers. The researchers defined school community as measured by acceptance, respect, cooperative effort, feelings of family and closeness, reliability of faculty, and shared beliefs and values. The researchers found that the strongest predictor of self-efficacy in teachers was school community:

Although there are consistent suggestions from teachers' unions that smaller classes and higher pay will attract and retain good teachers in the profession, these results suggest that fostering cooperative environments and allowing teachers reasonable autonomy in their classroom practices are more likely to foster the efficacy and satisfaction of teachers (Lee, et al., p. 205).

These findings indicate that PARCS programs may foster positive school climate and may, in turn, encourage teacher efficacy and professional satisfaction.

Action Research and Professional Development

Teacher directed action research has been a popular method of self-directed professional development for some time (Marzano, 2003). Through action research, teachers can reflect on their practice, gather student data, and utilize findings to improve teaching. Teacher action research can be a collaborative or solitary journey. The following studies describe a variety of teacher action research studies.

Auger and Wideman (2001) studied pre-service teachers' use of action research. During 13 weeks of practice teaching, forty-two participants developed and carried out an action research project. Researchers assert that a teachers' examination of their own practice results in change at the classroom level. They also offer standards of practice so that beginning teachers can use action research immediately upon entering the field. These

standards include: working with friends and mentors to plan and implement studies and for validation of findings; and using the results of their studies to pinpoint future professional development needs.

Vacca (1994) offers several indicators of successful professional development programs. She states, "The process of professional development should be:

- hands-on, relating directly to classroom teaching and learning;
- Individual, evoking a personal, reflective response;
- Collaborative, joining professionals in working partnerships;
- Gradual and long-term, taking time and commitment." (p.102)

Vacca also recommends two strategies for professional development, developing an autobiographical sketch, and conducting an action research project. The purpose of the autobiographical sketch is to allow teachers to use their own experiences with learning to develop best practices for teaching students. Action research is used when teachers raise questions about their teaching practices, test their assumptions, and evaluate their results in order to improve instruction.

Using an action research model, a professional development committee in Calgary, Canada developed principals to guide professional growth (Paquette, 1987, p.37). Paquette compared teachers' professional development to classroom instruction and found, "while we would never think of presenting random, disconnected lessons to our students, that was precisely what we were doing in our staff development activities (Paquette, p.37)." The resulting principles include: small group instruction, voluntary participation, relevant activities, and a collegial system of support for professional growth.

Marshall and Hatcher (1996) describe career development taking place at the Illinois Math and Science Academy. Called CADRE (Career Development Reinforcing Excellence), the program holds teachers accountable on three aspects of professional growth: dialogue, action research, and authentic assessment of practice. Dialogue is important to the professional growth process in that it allows teachers to discuss questions and problems as well as to assess progress. Action research allows teachers to investigate their questions about teaching and learning, for example, testing the validity of open-ended questions in math. Finally, authentic assessment of practice allows faculty to seek advice from fellow teachers about whether

they have improved in areas of understanding, teaching, and collaborative inquiry. According to Marshall and Hatcher, "not only are faculty talking with one another in ways they never have before, but their dialogue is focusing on integrative strategies to enhance student learning (Marshall & Hatcher, p45)."

Slick (2002) describes a pilot program she helped coordinate. The pilot program involved 52 veteran K-12 teachers enrolled in a graduate program at a Wisconsin University. Slick outlines suggestions from participants to those wishing to start their own learning communities. These include: (a) seeking out positive people and avoiding negative energy, (b) developing tolerance and understanding, (c) being courageous and taking risks, and (d) working to build community and living by community values. Findings from this program indicate that teachers participating in learning communities are more likely to remain happy in their chosen careers. Slick contends that this is an important finding in light of current teacher shortages.

Little and Houston (2003) evaluated the conceptual framework and implementation strategies used by the state of Florida in a school reform effort carried out through professional development activities. The model of the

program was research- into- practice, where teachers researched methods, implemented the new techniques, and collected student outcome data. Participation in the program was by application. The number of participants was not reported. The program consisted of state sponsored professional development in the form of 2- to 5- day workshops, and on-site follow-up visits. The authors concluded that positive outcomes of the program were a result of educator collaboration, clear goals, and a focus on "quality implementation of scientifically based instructional strategies to improve achievement of all students" (p.85).

Hoban and Hastings (1997) also examined professional development based on sustained learning of teachers. The study involved three male science teachers and is based on a process called action learning. Action learning is described as similar to action research, but with a focus on learning in a small team, not a focus on conducting research. Action learning encompasses four principles: reflection, community, action, and feedback. The teachers listened to tapes of student interviews over two years. In the third year, students were asked to complete logs after each science lesson to provide teachers with feedback. Teachers reflected on this feedback and collaborated to

generate new teaching strategies. They tried out the strategies in the classroom and regrouped to discuss how to improve their teaching. The authors found that teachers were uncomfortable listening to feedback from their own students, but found value in being able to come up with their own strategies, rather than being told what to do by "experts."

The articles discussed here indicate faculty study groups and learning communities are an effective way for teachers to improve classroom teaching practices, enhance student learning, and, therefore, improve their own attitudes toward their profession.

Mixed Methods, Qualitative Data Analysis, and Interactive Qualitative Analysis (IQA)

A significant proportion of education research is devoted to debate over research methods and methodological orientations. While this study takes a mixed methods, and thus pragmatic approach (Tashakkori & Teddlie, 1998), literature on mixed methods, qualitative research, and the relation of both to IQA are addressed.

Sogunro (2001, p. 3) describes his experiences with both quantitative and qualitative research. He states, "While the quantitative-qualitative research debate ravages, what is obvious is that there is no one best research method for all research and evaluations.

Different research purposes require the use of different research methods." This assertion is referred to elsewhere as the "dictatorship of the research question" (Tashakkori & Teddlie, 1998).

Other authors repeat this plea for "paradigmatic tolerance" (Smeyers, 2001). For example, Pring (2000) elaborates on the "'false dualism' of education research," and Onwuegbuzie (2001) laments "Why Can't We All Get Along?"

One of the best arguments for utilizing mixed methods is the possibility of increasing internal validity (or inference quality) of the research through the application of triangulation techniques. Meijer, Verloop, and Beijaard (2002) examined multi-method triangulation in reference to internal validity. Their study focused on a complimentary rather than confirmatory approach to triangulation, where data from different instruments were combined to develop a comprehensive view of the phenomena under study. They conclude that the use of triangulation is an effective means of increasing inference quality.

IQA claims to have roots in the qualitative perspectives of phenomenology due to the focus on "an inventory of consciousness" and "socially constructed meaning" (Northcutt & McCoy, 2004, p.4). The connection

between the phenomena and the socially constructed meaning at the heart of IQA is reinforced by Iannone (1995, p. 356) who warns against "ignoring the external objects, the community, and the external worlds [since] phenomenology has always included the idea that we are also part of this world."

A major difference between IQA and traditional qualitative analysis is the ownership of the analysis. Ryan and Bernard (2003) explain the multitude of traditional qualitative data analysis techniques. From grounded theorists to schema analysts to content analysts, qualitative researchers vary in the way they find themes within the text. The difference is that in IQA, it is the participant, rather than the researcher who is responsible for finding the themes. When viewed from the goal, rather than technique, IQA melds easily with other qualitative methods. "We focus on the sociological tradition that uses text as a 'window into experience' rather than the linguistic tradition that describes how texts are developed and structured" (Ryan & Bernard, p. 290).

Chapter Summary

The literature in this chapter provides the foundation for this study. This chapter presented a summary of literature related to professional development, PARCS, and

action research. The comprehensive school reform literature was addressed and its ties to school and teacher effectiveness described. Finally research concerning mixed and qualitative research methods was summarized. The next chapter details the methods and procedures of the current study.

Chapter 3 Methods

The purposes of this study are two-fold. First, this study aims to explore characteristics of teachers and schools participating in Professional Action Research Collaboratives (PARCs). This includes a contrast of PARC schools with a group of matched comparison schools and an exploration of teachers' attitudes within PARC schools. The other goal of this study is to attempt to validate a new method of conducting qualitative research, Interactive Qualitative Analysis (IQA).

IQA

A personal concern with the use of qualitative inquiry is the introduction of the researcher's bias into the research process. Many researchers contend that bias is an inherent characteristic of qualitative research that can be acknowledged and explored by the researcher (Maxwell, 1996; Miles & Huberman, 1994; Patton, 2002; Tashakkori and Teddlie, 1998). Creswell (1998) calls such researcher self-awareness "reflexivity" and Patton (2002, p.544) suggests researchers "discuss and take into account biases."

Since qualitative research is subjective in terms of data collection techniques and data analysis procedures, I

have chosen to use participant analysis¹ to address and reduce the amount of bias introduced into the project by my own experiences and ideas. IQA allows for the reduction of bias by involving participants in the formation of themes and relationship theories. In this study, IQA is used to formulate a theorized relationship between WFSGs and both teacher professional attitudes and school climate. This relationship serves as the model for interview protocol topics to be used in individual interviews in the main study.

Research Design

This study follows a Concurrent Triangulation Approach (Creswell, Plano Clark, Guttman, & Hanson, 2003). This method is suggested for use when the goal of research is to cross-validate findings within a single study. According to Creswell, et al. (p. 217), there are benefits and limitations to consider when using this method. The Concurrent Triangulation Approach utilizes only one data collection phase resulting in a shorter data collection time period. This approach benefits from the advantages of both QUAN and QUAL methods. Triangulation also allows the researcher to note convergence of findings from QUAL and

¹ This concept is similar to “member checks” referred to in other research designs, however participant analysis is used as the main analysis method, whereas member checks take place after traditional qual. analysis methods are used.

QUAN methods, or to explain any non-convergence of findings.

A possible limitation is the necessity for transforming one data type for comparison with the other. This may be difficult in light of the scarcity of literature on data transformation (Creswell, et al., 2003, p. 230). According to Creswell, et al., (2003, p.217), difficulties may arise when comparing the results of separate analyses when data exist in different forms.

Figure 3.1 represents the research flow of the present study. In keeping with the Concurrent Triangulation Model, this study utilizes simultaneous QUAN and QUAL data collection and analysis phases. Both QUAN and QUAL data were collected concurrently through teacher observations and interviews and through the collection of school climate surveys and School Performance Scores.

Integration of methods occurred during data analysis phase where data from school climate surveys were compared with interview data about teachers' views of school climate effects. In addition, data from the LCET was compared to quantitized interview data to examine whether teacher perceptions of teaching effectiveness (as determined through analysis of interview transcripts) are actualized in the classroom.

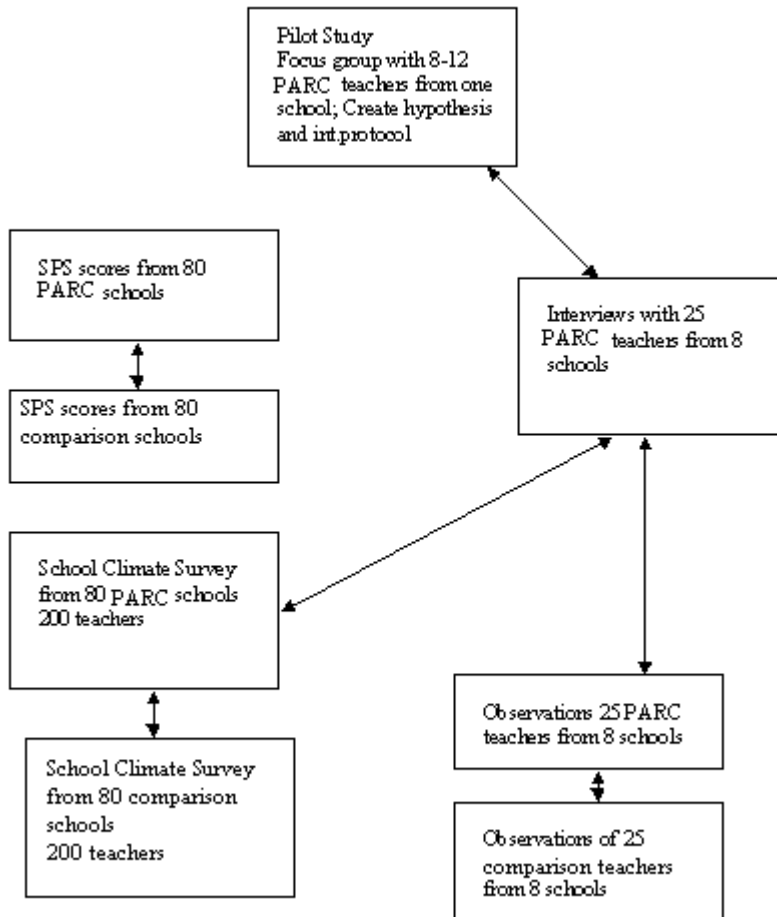


Figure 3.1. Research Design representation illustrating proposed comparisons within this study. This study uses a mixed method orientation. Quantitative analyses are pictured on the left, qualitative on the right.

Methods

Sampling Strategy

The use of mixed methods necessitates employment of both purposive and non-purposive sampling strategies (Kemper, Stringfield, and Teddlie, 2003). A probability sample is required to meet assumptions for statistical

tests to be run during the quantitative phase of the study. For this probability sample, a multistage cluster sample of schools in the state participating in two state monitored PARC programs, the Learning Intensive Communities for Success Process and the Louisiana Teacher Advancement Program, were selected along with Comparison Schools similar in socioeconomic status (SES) and community type, or urbanicity. For this study, I used the percentage of a school's students eligible for free or reduced- cost lunch to estimate a school's SES. Sampling PARC and Comparison Schools from the same districts helped to control for differences in Urbanicity.

Within each school, I selected a stratified random sample of three teachers to participate in the school climate survey. My selection was limited to teachers in grades three, five, and seven. Limiting the sampling pool in this way helped to improve the inference quality of the study by decreasing variance introduced by differences in grade level. A total sample of 160 schools would allow statistical power to be set at 80% and would detect a moderate-sized effect for an alpha of .05.

For the qualitative phase of the study, a purposive sample was necessary. The purposive sample consisted of a maximum variation sample of 4 PARC schools in the region

based on urbanicity and school performance scores (SPS). According to Miles & Huberman (1994, p. 28), "Maximum variation sampling documents diverse variations and identifies important common patterns." Creswell (1998, p. 120) suggests, "Select unusual cases in collective case studies and employ 'maximum variation' as a strategy to represent diverse cases to fully display multiple perspectives about the cases."

Four Comparison Schools were also selected along with the PARC schools on the aforementioned characteristics: Community Type (Urban or Rural) and SPS. Factors for this two-by-two design included: urban-high SPS, rural-high SPS, urban-low SPS, and rural-low SPS. Two schools (one PARC and one control) were included in each cell.

Twenty-four teachers, randomly selected across the four PARC schools participated in interviews. These teachers and twenty-four randomly selected control teachers were also observed using the LCET protocol. Love Bell and Northcutt (2003) suggest using approximately 25 interview participants in an IQA study to provide the ideal amount of information for both cross-case and interview-to-focus group comparisons. The purposive teacher sample pool was also limited to teachers in grades 3 to 8. Observing and interviewing six teachers at each school provided

sufficient information to allow a thorough analysis of phenomena in question.

Although it can be assumed that teachers in Comparison Schools are participating in some form of professional development due to the national demand for quality teachers, teachers participating in locally developed and monitored professional development were considered for the control group. Pechman and Fiester (1996), and Ross, Smith, and Casey (1999) call for comparisons of locally developed, and externally developed programs (e.g. LINC and TAP).

Data Collection

Interview Protocol. The relationships hypothesized through the pilot IQA focus group were tested through the use of informal interviews. Interviewing is one of the most common, flexible, and informative ways to collect information about others (Creswell, 1998; Fontana and Frey, 2003).

The interview protocol used in this study was created through the analysis of affinities created by the pilot focus group. The IQA focus group agreed on seven themes underlying the school culture created by participation in PARCs. The interview protocol (Appendix 1) consists of two parts, the open-ended "axial" interview in which

respondents elaborate on their experiences with each affinity, and the structured "theoretical" interview resulting in identification of relationships between each affinity (Northcutt & McCoy, 2004).

In the IQA process there are 4 steps to interviewing:

1. Hand the respondent a list of names and descriptions of each affinity (the affinity write-ups). Introduce the affinity to the respondent, relying on the write-up of the affinity and/or examples produced by the focus group.
2. Ask the respondent to reflect on his or her personal experience vis-à-vis the affinity by saying, "Tell me about your experience with this."
3. Ask follow-up questions and use probes to elicit examples of the affinity in the respondent's experience and to elucidate the meaning of the affinity to the respondent.
4. After the respondent has covered all the affinities, conduct the second part of the interview, in which the respondent uses an Affinity Relationship Table to examine how he or she perceives the connections between all possible pairs of affinities. (Northcutt & McCoy, 2004, pp.202-203)

School Climate Survey. School climate was measured with the administration of a survey (Appendix 2). This survey consists of introductory demographic and Professional Development experience questions followed by a School Climate subscale Created by Taylor and Tashakkori (1995) from the 1990 follow up to the National Educational Longitudinal Study (NELS). Taylor and Tashakkori used factor analysis to examine data from the NELS database. They found five factors related to School Climate: Principal Leadership, Student Discipline, Faculty Collegiality, Lack of Obstacles to Teaching, and Faculty Communications. Sample items for each factor are included in table 3.1. These factors combined explained 53% of the variance in the NELS School Climate data.

Table 3.1
School Climate Survey Items

Factor	Item
Principal Leadership	Principal makes plans and carries them out.
Student Discipline	Physical conflict is a problem at this school.
Faculty Collegiality	Colleagues share beliefs about school mission.
Lack of Obstacles to Teaching	Students are incapable of learning material.
Faculty Communication	Teacher coordinates course with department teachers.

LCET. Teacher effectiveness was measured quantitatively by observations based on the Louisiana Components of Effective Teaching (LCET). LCET observations result in a more descriptive record of teacher behavior during classroom teaching due to the scripting nature of the instrument. The LCET were created in 1993 to assess new teachers in the State of Louisiana (Tarver, Fife, and Harmon, 1995). The LCET instrument is currently used for its intended assessment purposes, and for state program evaluations and research studies (Teddlie, Kochan, & Taylor, 2001). The current version of this instrument was used in this study.

The current version of the LCET used for Louisiana State teacher assessments consists of 5 Domains of Teaching Standards: Planning, Management, Instruction, Professional Development, and School Improvement. This study focused on the two Domains, Management and Instruction, which focus on teacher classroom behavior. These two Domains are subdivided into Components and Attributes. Examples of components and attributes for both the Management and Instruction Domains are listed in Table 3.2.

Table 3.2.

Components and Attributes of LCET Domains

Domain II. Management

Component A. The teacher maintains an environment
conductive to learning

IIA2. Promotes a positive learning environment

Domain III. Instruction

Component B. The teacher provides appropriate
content

IIIB1. Presents content at a developmentally
appropriate level

Inference Quality and Inference Transferability

The use of Mixed Methods research requires the adoption of certain new terminologies (Tashakkori and Teddlie, 2003a, 2003b). Among these new terms are Inference Quality and Inference Transferability.

Tashakkori and Teddlie(2003a., p.709) define inference quality as "the degree to which the interpretations and conclusions made on the basis of the results meet the professional standards of rigor, trustworthiness, and acceptability as well as the degree to which alternative plausible explanations for the obtained results can be ruled out." Inference transferability is defined as, "the generalizability or applicability of inferences obtained in

a study to other individuals or entities (Tashakkori and Teddlie, p.710).

To insure quality and transferability of inferences, several techniques will be employed. Design quality techniques such as random sample, maximum variation sample, use of Comparison Schools, reflexive journaling, triangulation, and peer debriefing were utilized to ensure the inferential quality of the study. Erzberger and Kelle (2003) describe several guidelines for using triangulation to insure inference quality in Mixed Method research studies. Taking advantage of triangulation techniques, the QUAN phase of this study will be employed to complement the results of the QUAL phase.

Interpretive Rigor, a component of inference quality, can be compared with external validity. Interpretive Rigor was strengthened through the use of member checks, reflexive journaling, use of Comparison Schools, thick description, triangulation, and peer debriefing.

Inference Transferability was strengthened through the following techniques: selecting a relatively large sample size, checking assumptions of statistical tests, use of accepted measures (LCET, NELS School Climate Subscale), use of interview and observation protocols, thick description of context and observations, selection of a random sample,

and reflexive journaling. In addition to the above methods, the sending and receiving contexts, to which inferences were associated, were thoroughly explored and described.

Data Analysis

Similarities of IQA and Grounded Theory. Northcutt and McCoy (2004) use the Denzin and Lincoln (2000) metaphor of *bricoleur*, or quilt-maker for qualitative researchers. Northcutt and McCoy (p.43) expand on this metaphor by explaining the purpose of IQA as allowing "a group to create its own 'interpretive quilt,' and then to similarly construct individual quilts of meaning... The quilt is represented as a system of patches (affinities) held together by stitches (relationships among affinities)." IQA also dictates that researchers: interpret, ensure that the ground of interpretation provides as much epistemological traction as possible, and to tread softly on that ground (p.44).

Many protocols are in place in IQA studies to ensure the researcher leaves as few tracks on the "ground of interpretation" as possible. Many of those protocols are familiar to researchers with experience in grounded theory. For example, the purpose of grounded theory studies, "to generate or discover a theory (Creswell, 1998, p. 56)" is

similar to the "quilt creation" in IQA. The systematic and standardized processes of grounded theory are reflected in the prescribed steps of an IQA study. In addition, terminology, such as "open coding", "axial coding," and "theoretical coding" transverse both types of studies and retain similar meaning.

The most obvious difference between IQA and grounded theory is also the most methodologically significant. In grounded theory, coding and analysis is the job of the researcher, with checks for inference quality coming at the end of analysis in the form of comparisons against theory and member checking. In IQA, the "member checking" is the crux of the analysis. IQA studies allow participants to conduct the first steps of the analysis and, therefore, retain the participant "voice" longer than other methods of analysis.

Analysis Procedures in the Present Study. Due to the scope of this study, analysis procedures for each hypothesis and research question will be explained separately.

Hypothesis 1: Schools Participating in PARCS will demonstrate greater school effectiveness than Comparison Schools. School effectiveness scores in the form of State-assigned School Performance Scores (SPS) were compared for

PARC and Comparison Schools. Due to the non-continuous nature of these scores, nonparametric comparison techniques were employed. Descriptive and demographic school data were examined and differences in LINCS and TAP SPS were also inspected. These analyses allow the contrast of PARC school effectiveness to that of comparison schools.

Hypothesis 2: Teachers in schools participating in PARCs will demonstrate higher levels of teacher effectiveness than teachers in Comparison Schools. Teacher Effectiveness scores determined by LCET observations were compared for PARC and Comparison Schools using inferential statistics. Descriptive and demographic school data were examined and differences in LINCS and TAP Teacher measures were also inspected. These analyses allow the comparison of PARC teacher performance to that of Comparison Schools.

Hypothesis 3: School climate in PARC schools will be more positive than school climate in Comparison Schools. School Climate scores determined by survey responses were compared for PARC and Comparison Schools using t-tests. Descriptive and demographic school data were examined and differences in LINCS and TAP survey measures were also inspected. These analyses allow the comparison of PARC school climate to that of Comparison Schools.

Research Question 1: How does school climate affect teacher effectiveness in PARC schools? and Research Question 2: Do the interview data substantiate the hypothesized relationship system created by the focus group IQA exercise? Both research questions were explored through the IQA process. This process is described below and pictured in figure 3.2.

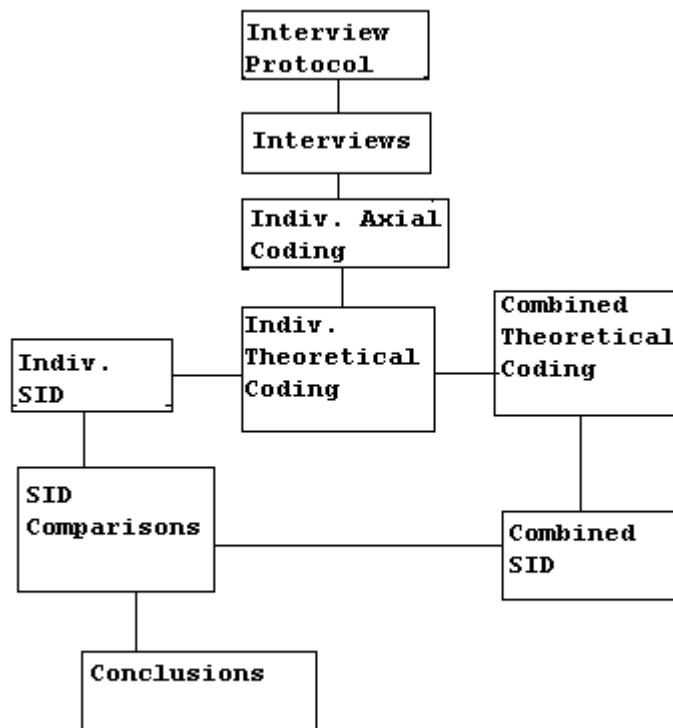


Figure 3.2. IQA Interview Analysis Process adapted from Northcutt & McCoy, 2004, p. 240.

Interview data were explored through axial and theoretical coding to create themes. Both individual interviews and the group of interviews were coded

theoretically. The resulting theoretical codes were transformed into System Influence Diagrams (SID) for individuals and the group. The SID were subjected to two comparisons:

1. Focus Group SID to Interview
2. Interview to Interview

Finally, the conclusions from these comparisons were compared with theory, a process that will serve to explain the PARC phenomena and make predictions about school and teacher attitudes and performance within the program.

Interview data were also compared to survey results from PARC schools to determine if QUAN and QUAL results corroborate and to determine if the influences of school climate mentioned in regional interviews are reflected statewide.

Finally, interview data were qualitized into profiles, which were compared with data from the LCET to see if profiles match classroom instruction behaviors. This helps to explore whether teachers' ideas of school "community" carry over into classroom practice.

Concerns

Since different types of PARCs are in place in schools across the world, sampling was limited to a small section

of participating schools. This may introduce problems with transferability of inferences to schools in other areas. Lincoln and Guba (1985) suggest providing thick description of the sending and receiving contexts as a means of measuring transferability between those contexts. Tashakkori and Teddlie (1998, 2003 p.42) suggest that no inference is ever fully transferable to all receiving contexts. In the spirit of the *gestalt principle*- the whole being greater than the sum of its parts, they contend that mixed method inferences possess inherently more inference transferability than inferences drawn from solely quantitative or qualitative methods.

In terms of sample selection and gaining access to schools, many schools participating in PARCs are pressured to raise performance from State and National Accountability regulations. Therefore, schools already being subjected to observation and testing may not be receptive to further study.

Another concern addresses the creation of the interview protocol from the Summary Interrelationship Diagram. This relationship may introduce bias into the interview data in the form of leading questions. It was important to conduct the interview flexibly so that diverging views were free to surface and expand.

The final concern is the use of the Interactive Qualitative Analysis technique described by Love Bell and Northcutt (2003). This technique is new and not widely accepted. Inferences made from interactive analysis may not be accepted within the academic and political communities as quality inferences.

Chapter Summary

This chapter outlined the methods and procedures used in this study. The chapter began with a description of the methodological frameworks guiding the study- Interactive Qualitative Analysis and Mixed Methodology. Sampling and Data collection procedures were illustrated, and issues surrounding quality of inferences were addressed. Following an explanation of the data analysis techniques, the chapter ended with a summary of concerns and possible limitations of the study.

Chapter 4 Pilot Study: A Test of the IQA Focus Group

This chapter describes the Interactive Qualitative Analysis (IQA) focus group process. It outlines the factors and procedures that are included in the IQA focus group, and explains, in detail, how the process was utilized in the present study.

Purpose of the Pilot Study

Two aspects of this research project necessitated the use of a pilot focus group: the content component and the methodological component. Through the pilot study, I hoped to gauge perceptions of teachers participating in PARCS on both school climate and professional satisfaction, and this constitutes the content component. I also hoped to come away with a visual representation of school climate factors through the use of IQA, and this constitutes the methodological component.

PARC: Information Gathering

One of the reasons this pilot study was conducted was to gather initial information, which will drive the rest of the study. The pilot study provided information on teachers' perceptions of the effects of Professional Action Research Collaboratives (PARCs) on both school culture and professional satisfaction. Information gathered during

thepilot guided the creation of the interview protocol to be used later in the study. This information also helped me to generate a representation of the systematic relationships of factors at work in PARC schools.

IQA: Methodological Exploration

The IQA process dictates the utilization of a focus group to both identify factors related to the question at hand, and to unearth the relationships between those factors (Northcutt & McCoy, 2004). Figure 4.1 illustrates the IQA process beginning with the initial focus group.

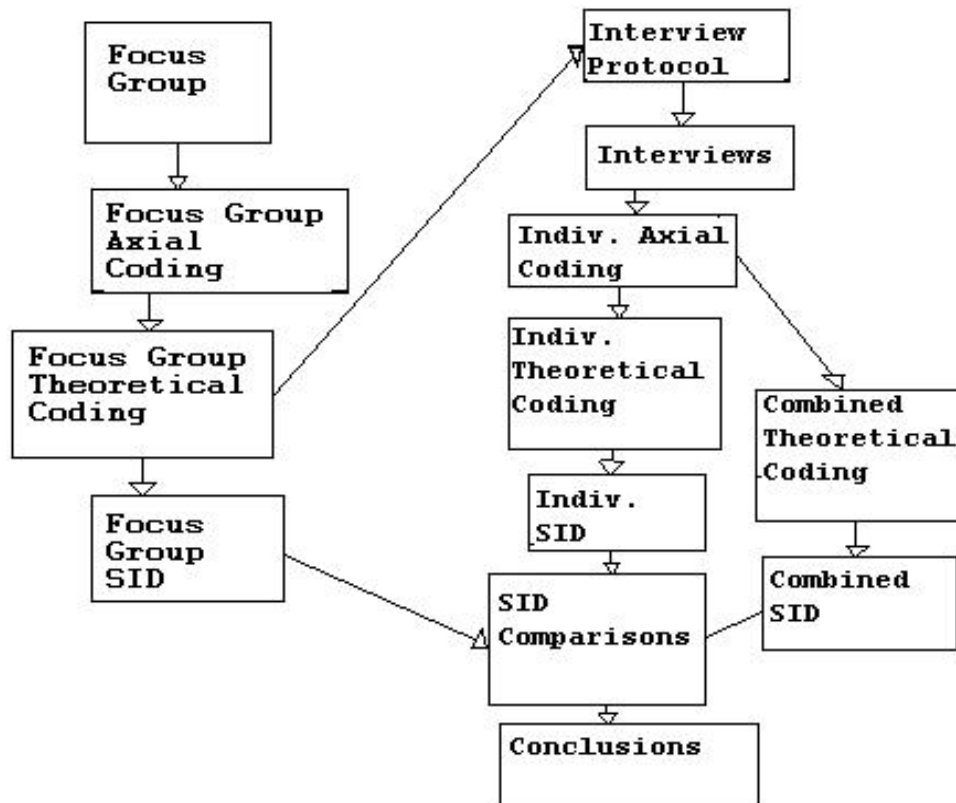


Figure 4.1. The IQA process uses a focus group and individual interviews to create a final Systems Influence Diagram.

In this study, the IQA focus group was used both as a means of uncovering factors associated with the PARC groups and as a means by which to test the quality of inferences drawn from the IQA process. To test the strength of IQA as a research method, I compared the affinity relationships established in the focus group with both interview data and with findings from the literature.

Selection of School and Teacher-Participants

In this research project, IQA was employed in a pilot study consisting of a focus group interview with eight teacher-participants, a number consistent with the traditional focus group model described by Krueger and Casey(2000). According to Northcutt and McCoy (2004), "IQA focus groups are formed with groups of individuals who may certainly have varied opinions and experiences with the system under study but who more critically share a common perspective (p. 47)." In this study, the common perspective was that of the PARC teacher-participant.

The teachers in this focus group were randomly selected from a PARC school which best represents a "typical case" school (Patton, 2002). Patton suggests, "When entire programs or communities are the unit of analysis, the processes and effects described for the typical program may be used to provide a frame of

reference" (2002, p.236). A "typical" school, "North Street Elementary," was chosen based on average socioeconomic status and School Performance Scores for Louisiana schools. The utilization of a "typical school" for the focus group interview facilitated the creation of a theory and interview protocol.

Summary of IQA Focus Group Process

There are four major steps to the IQA focus group (Northcutt & McCoy, 2004):

1. Identification of factors or affinities through silent brainstorming of affinities onto notepaper and inductive coding (silently organizing notes containing affinities into meaningful groups).
2. Identifying relationships among factors by analyzing all possible pairs. An Affinity Relationship Table is completed, which summarizes all perceived relationships in the system.
3. Creation of an Interrelationship Diagram (IRD) through theoretical coding, or creating a table representing all relationships in a system.
4. Constructing the System Influence Diagram (SID) or mind-map. The SID is a graphical representation of all relationships in the system, including drivers and outcomes. This can be thought of as a "qualitative structural equation." (p.48)

These steps, in relation to the present study, will be reviewed in detail below.

System Elements

Constructing Affinities through Silent Brainstorming

During the pilot study, professional attitudes and impact of WFSGs on school “community” were assessed by a focus group using “silent nominal techniques” for data generation (Love Bell and Northcutt, 2003; Northcutt and McCoy, 2004). Teachers responded to an Issue Statement by silently brainstorming on slips of adhesive notepaper. The Issue Statement consisted of the researcher describing the concepts of School Climate and clarifying the definitions by answering questions. The Issue Statement for this study was:

- School Climate can be thought of as the general “feeling” or “culture” of the school. How teachers, students, administrators, and parents relate to one another and the school’s shared mission, vision, and values are all a part of the schools’ climate. How would you describe the climate at this school?

A brief discussion of the issue statement was conducted before teachers began silent nominal brainstorming. Examples of notes from the silent brainstorming are presented in Table 4.1.

Table 4.1.

Notes from Silent Nominal Brainstorming

- Whole faculty is reprimanded for actions that only a few faculty members are involved in.
 - No time.
 - Climate: stressful.
 - Most teachers want to work at this school. I have been offered more money in another parish and chose to stay here.
 - Turnover of teachers is low.
 - Not enough time to do all tasks requested.
 - Principal keeps up with current research on best practices.
 - Teachers' expectations are high!
 - Parent involvement is high.
-

Affinity Analysis

Following methods outlined in Love Bell and Northcutt (2003) and Northcutt and McCoy (2004), focus group data were analyzed by participants' creations of affinities and affinity clusters from raw data (silent open coding and categorization). One at a time, teachers moved the adhesive slips containing their own notes into groups of

like terms with other teachers' notes. The process was kept silent to prevent any one individual from dominating the procedure. Two examples of affinity clusters are presented in Table 4.2.

Table 4.2.
Affinity Clusters

Principal	Retention (People want to be here)
<ul style="list-style-type: none"> • Whole faculty is reprimanded for actions that only a few faculty members are involved in. • The principal understands about personal issues. • Fear in front of principal 	<ul style="list-style-type: none"> • Safe • Most teachers want to work at this school. I have been offered more money in another parish and chose to stay here. • Many teachers have taught together a long time. • Turnover of teachers is low.

Next, the researcher acted as a facilitator to further refine affinities from affinity clusters with the focus group participants (axial coding). The refinement of affinities consisted of open discussion from all participants, the finalization of affinity clusters, and the naming of clusters. This process led to a discussion of the generation of affinities in which like affinity clusters were grouped and themes from groups were named.

The resulting affinities and affinity names are presented in Table 4.3.

Table 4.3.
Focus Group Affinities and Affinity Names

Affinity	Affinity Name
1. Principal and Leadership Characteristics including willingness to listen and problem-solving style	Principal
2. Time Issues created by added responsibilities from PARCs and accountability measures	Time
3. Stress caused by varying factors	Stress
4. Teacher Retention and School Climate including safety, parent involvement, and salary issues	Retention
5. Added Responsibility due to PARCs	Responsibility
6. Trust issues such as teachers tattling on one another and desire to socialize outside of school	Trust
7. Strong Academic Tradition including high expectations from parents, teachers, students, and administration	Academics

System Relationships

Theoretical Coding

An Affinity Relationship Table (ART) was created to document the direction of affinity relationships (appendix 3). The process was tape-recorded so that any examples of the relationships given during the discussion would be available for analysis and to support the resulting decisions. Northcutt and McCoy (2004) recommend researcher facilitation of the group's discussion on each potential pair if the focus group is made up of a small number of participants [less than 16²] (p. 156). Care was taken in this process to prevent more vocal or assertive participants from driving the consensus.

Determining Drivers and Outcomes

The next step in the focus group analysis occurred after the conclusion of the group meeting. The output of the focus group theoretical coding activities was summarized in an Interrelationship Diagram (IRD). The IRD describes the relationships among affinities by graphically representing the relationships with arrows. According to Northcutt and McCoy (2004),

²Although 16 seems like a large number of focus group participants (e.g., Krueger and Casey, 2000), IQA focus groups can be larger than traditional focus groups due to protocols ensuring equal participation among participants.

Arrows point only left or up, and each relationship is recorded twice in the IRD in a manner not unlike double-entry bookkeeping. For example, if a relationship was determined between 1 and 2, it might be noted as 1←2 and read as *two influences one*. Two arrows would be placed in the IRD to represent the relationship (p.170).

Left arrows are called "Ins" and up arrows are called "Outs." Ins represent "being influenced by another affinity" (i.e., like a dependent variable) according to the ART. Outs represent "influencing another affinity" (i.e., like an independent variable) according to the ART. All relationships are directly carried over from the ART agreed on by participants.

A delta value is computed for each affinity by subtracting the number of "Ins" from the number of "Outs" associated with the affinity. This value is used to assign affinities as drivers or outcomes:

- Drivers - affinities with positive deltas [more "Outs" than "Ins"]
- Outcomes - affinities with negative deltas [more "Ins" than "Outs"] (Northcutt & McCoy, 2004, p. 173).

The resulting IRD with assignments is pictured next (Table 4.4). The "x" character is used as a placeholder in the IRD, since affinities cannot influence themselves. The

primary driver in this pilot study was found to be the school principal and the primary outcomes were both teacher stress and teacher retention/ school culture. Academic Tradition and Responsibility were assigned as secondary drivers due to their lower positive values. Time Issues and Trust Issues, both with higher negative values, were assigned as secondary outcomes.

Table 4.4
Tabular IRD for Focus Group Affinities

	1	2	3	4	5	6	7	Out	In	Δ	Assign.
1. Principal	x	↑	↑	↑	↑	↑	↑	6	0	6	Driver
2. Time	←	x	↑		←	↑	←	2	3	-1	Outcome
3. Stress	←	←	x		←	←	←	0	5	-5	Outcome
4. Retention	←			x	←		←	0	3	-3	Outcome
5. Resp.	←	↑	↑	↑	x		←	3	2	1	Driver
6. Trust	←	←	↑			x	←	1	3	-2	Outcome
7. Academics	←	↑	↑	↑	↑	↑	x	5	1	4	Driver

Representing the System: Generation of the Systems Influence Diagrams

In the final phase of focus group data analysis, resulting clusters and affinities were summarized in the Systems Influence Diagram (SID) pictured next (figure 4.1). To create the SID, I first placed boxes representing each

affinity on paper with outcomes on the right and drivers on the left. Northcutt and McCoy (2004) state:

Because the same topology may have infinitely many representations, affinities may be arranged so that the SID best communicates the structure of the system (as long as no links are broken). We read from left to right, so arranging the affinities in order of delta from left to right is a good general rule of thumb for representing the system. (p.180)

The next step in creating the SID consisted of drawing connecting lines between affinities representing the relationships listed in the ART. Direct links between affinities were removed if other, non-direct links related the affinities. According to Northcutt and McCoy (2004),

The problem with saturation is that a cluttered SID, while being comprehensive and rich, can be very difficult to interpret, even for a modest number of affinities that are highly interlocked or embedded within the system. (p.176)

In the final version of the SID (shown in figure 4.1), non-redundant links are shown in bold, while redundant links are readmitted in a lighter color. Non-redundant links are interpreted as direct relationships in the figure below, while redundant links are interpreted as indirect relationships and are indicated with lighter lines. Inclusion of both types of relationships in the SID "produces a representation that captures the mind-map of the participant in both its original (or unrationalized

[sic.]) form and its rationalized form (Northcutt & McCoy, 2004, p. 183)."

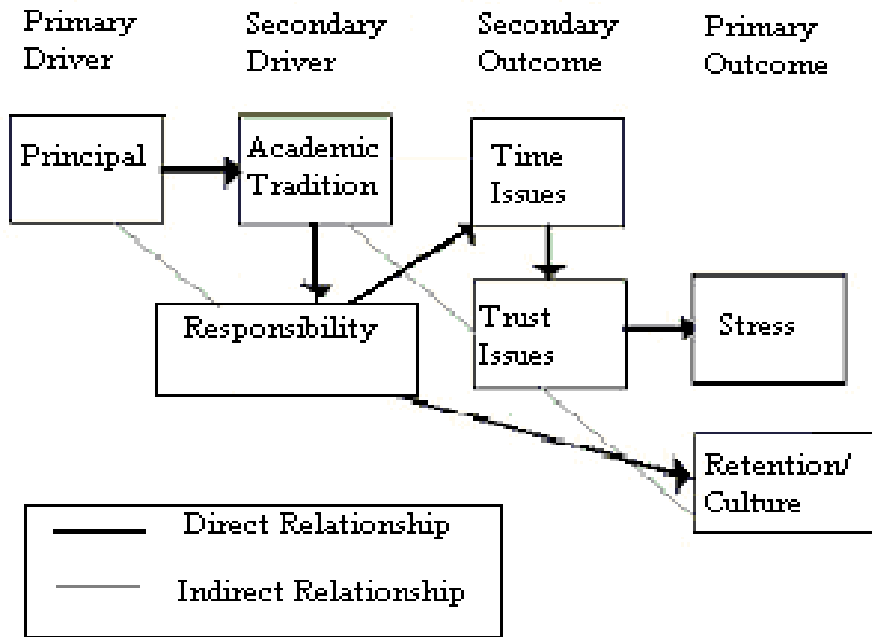


Figure 4.2. Systems Influence Diagram of affinities and relationships created from pilot IQA focus group.

The System Influence Diagram in figure 4.1 attempts to describe hypothesized relationships from the focus group affinities. This diagram will be compared with interview data in the next phase of the study. The results of the focus group discussion also facilitated the creation of the interview protocol to be used in the interview phase of the main study.

Pilot Study Conclusions

Information Gathered

This pilot study provided information about teachers' perceptions of school climate and professional satisfaction at a typical PARC school. Focus group participants indicated that the most important factor in the overall feeling of school community is the administrator. They agreed that the administrator is an important catalyst for promoting positive relations among teachers, parents, and students. The teachers also agreed that school leadership is the greatest vehicle for the success or failure of professional development activities within the school, including PARCs.

The school's strong academic tradition and teachers' responsibilities were also indicated as strong drivers of school climate. The biggest outcomes of the school climate system in a typical PARC school are feelings of stress and a culture promoting high teacher retention.³

Since changes at the driver level of the system trickle down into the outcome levels, it can be expected that changes in administration or administrative behavior would

³Although these outcomes seem to be at odds, the SID indicates stress is influenced by time and trust issues while retention and culture are not. It will be informative to compare this system of influence with data from other schools.

have effects on teacher retention and overall teacher stress.

Methods Explored

A second outcome of this pilot study is the overview of the IQA focus group process. This focus group and participant analysis was successful in creating a visual representation of the school climate system in a typical PARC school. This visual representation will be essential to investigating the PARC phenomenon in other school situations later in this research project.

The teachers involved were apprehensive about participating in the activity at the start. This could be due to the unfamiliar nature of the silent nominal technique, or due to the teachers' lack of knowledge about being selected to participate.⁴ Once the activity was explained in detail and the teachers began writing, the rest of the focus group and analysis went smoothly.

The teachers commented that they were reluctant to participate at first, because they thought their time could have been better spent. However, after the activity, they told me they were glad to have a chance to elaborate on the topic of school climate. There was an obvious change in temperament of the group from the beginning to end of the

⁴Unknown to the researcher, the administrator had rescheduled the focus group without notifying the selected teachers.

IQA activity as the teachers began to bounce ideas off of one another and to engage in instances of debate or clarification.

The analysis phase of the focus group was especially enlightening due to the process of clarifying thoughts and defining terms. Teachers often restated their thoughts after it was apparent that others took differing views on the meaning. For example, "I know I wrote *Principal* in this statement, but I meant for it to describe *Stress* instead." Such clarifications are typically not possible with researcher-only analysis outside of member-checking techniques at the end of a study when such changes can be catastrophic to conclusions.

Chapter Summary

This chapter presented an account of the IQA focus group process used in the pilot study. The chapter began with a justification of the pilot focus group and explained the intended outcomes. There followed an explanation of the selection of the participating teachers and rationalization for the selection of a "typical school" for initial exploration. IQA processes were then detailed and examples from the focus group were discussed. The chapter ended with a summary of the conclusions drawn from the focus group data creation and analysis.

Chapter 5 Qualitative Results

The purpose of this study is to investigate the effects of Professional Action Research Collaboratives (PARCs) on teacher effectiveness and school climate outcomes. This study also sought to test a new method of qualitative data analysis, Interactive Qualitative Analysis (IQA). Three hypotheses and two research questions were presented.

In order to organize the results of the investigation, qualitative and quantitative analyses will be discussed in separate chapters (Chapters 5 and 6 respectively). Then the results will be triangulated in the final chapter (Chapter 7).

Chapter 5 will address the results of the qualitative analysis and will give an examination of the IQA process. This chapter will be divided into the following sections:

- Section 1 will address the sample from which the qualitative data were gathered.
- Section 2 will answer the question- "How does school climate affect teacher-effectiveness in PARC schools?"
- Section 3 will address the interview data and finalize the school climate relationship system begun in the IQA Focus Group exercise. Research Question 2: "Do the interview data substantiate the hypothesized

relationship system created by the focus group IQA exercise?" will be addressed.

- The fourth section contains a review of the IQA process with a comparison to traditional qualitative data analysis and, finally, a chapter summary.

Qualitative Sample

To investigate the research questions posed in this study, I selected a sample of 8 Southern Louisiana Public Schools. Three LINCS and one TAP school were paired with 4 comparison schools with similar school performance scores (SPS). SPS can range from 0 to 120 and are calculated for each school as part of Louisiana's accountability plan under the No Child Left Behind Act of 2001. There are three weighted components to the SPS: criterion referenced test scores (60%), norm-referenced test scores (30%) and attendance (10%). The weights shift slightly to include a dropout score for grades 7 to 12.

The schools in this study were also matched by community type with 6 of the 8 schools paired by district to ensure similar community characteristics. One low-performing rural school was paired with its feeder school next door. Due to the difficulty in conducting observations in one politically charged district, the TAP School studied there was paired with a school in a similar,

but less hostile district. After pairing by SPS and community type, it was unrealistic to also pair by grade configuration due to the small number of available matches, so some elementary schools were matched with middle schools in this sample. The effect of grade configuration on the variables addressed here will be left to future study.

Table 5.1
Qualitative Sample School Performance

Sample	School (and Matched School) ⁵	SPS	Growth	Growth Label	Performance Label
TAP	Frances Doormand (Gabrial Oaks)	42.8	-6.6	School in Decline	Academically Unacceptable
LINCS	Richmond Middle (Richmond Upper)	68.5	-0.2	No Growth	One Star
LINCS	Brooks Terrace (Green Oak)	91.1	-0.8	No Growth	Two Stars
LINCS	St. Andrew Middle (Prairie Middle)	93.1	4.3	Recognized Academic Growth	Two Stars
Comp.	Gabriel Oaks Middle (Frances Doormand)	44.2	1.7	Minimal Academic Growth	Academically Unacceptable
Comp.	Prairie Middle (St. Andrews)	111.9	0.5	Minimal Academic Growth	Three Stars
Comp.	Richmond Upper Elementary (Richmond Middle)	66.9	1.7	Minimal Academic Growth	One Star
Comp.	Green Oak Parkway (Brooks Terrace)	88.4	-10.3	School in Decline	Two Stars

⁵ All school names are pseudonyms.

Schools in this sample received Growth Labels within a range of "Recognized Academic Growth" to "School in Decline" from the previous year. The schools' performance labels also ranged from "Academically Unacceptable" to "Three Stars" out of a possible "Five Stars." Table 5.1 details the SPS, Growth, and Labels assigned by the State of Louisiana for each sampled school.

The Schools: Brief Context Analysis

The eight schools described below are listed in random order but grouped by PARC and comparison status.

Frances Doormand Elementary School (FDES) is a low-performing, TAP school located in a notoriously poor-performing urban district. Ninety percent of the school's students receive free or reduced-price lunch and almost twenty percent are eligible for special services due to disabilities. Ninety-one percent of teachers at Frances Doormand meet the requirements for "highly qualified" under the No Child Left Behind Act (NCLB). As I waited there in the lobby filled with teddy bears and seasonal decorations, I shared a bench with a parent who was also waiting for a conference. Her child had been suspended for reasons she did not elaborate on. The woman, however, had no problem telling anyone within earshot that one day someone would "pop a cap" in the principal's "ass" and that "that bitch

would deserve it." She said she was only worried that her child might be in danger "when it happens." Unfortunately, I seemed to be the only one in the lobby which was bustling with children, teachers, and parents to be surprised by the monologue. Frances Doormand is matched with Gabriel Oaks Middle for this study.

In a part of the state populated with sugar mills and fishing boats, Richmond Middle School (RMS) hosts a potluck teacher appreciation luncheon each month. I was invited to attend one of these celebrations on one of the days I visited the school. I decided to opt out of the invitation so that teachers would not feel I was intruding on their occasion. RMS is matched with its neighbor, Richmond Upper Elementary School. "Highly Qualified Teachers" teach 86% of core courses at RMS. This large, rural, LINCS School is in School Improvement 1, which means it receives minimal assistance from the district and state due to low SPS. Fourteen percent of students at RMS have recognized disabilities, including speech and language impairments, and sixty-seven percent receive free or reduced-price lunch.

According to the School Report Card issued to Brooks Terrace (BT) by the State of Louisiana, the goal of the state is for all schools to reach an SPS of 120. Although

Brooks Terrace has an SPS of 91.1, this LINCS School is still in school improvement because of recent declines in their score. BT sports an excellent 95% attendance rate and 88% of their core courses are taught by "Highly Qualified" teachers. Only 7% of BT students are classified as learning disabled, but 79% receive free or reduced lunch. The school has a written "Parental Involvement Statement" along with a student code of conduct and crisis management plan. BT is matched with Green Oak Parkway for this study. Class sizes at BT do not exceed 26 students.

One of the teachers I observed at BT had been fired a few months earlier for failing to achieve certification status. The school rehired her a few days later as a long term substitute teacher at 50% of her salary and no benefits. I asked her why she chose to stay at BT instead of seeking other employment. She told me she didn't think her kindergarten class should be subjected to the turmoil of her leaving, since few of them had stable situations at home.

The 8th grade students at St. Andrew Middle School (SAM) were reading *Romeo and Juliet* during my visit. They discussed the plot, and characters, and then related the opening scenes to modern day situations. They moved on to discussing rhyme scheme and compared the play to some of

Shakespeare's sonnets. The students and teacher read from photocopies, there were no books. They were all crammed into a temporary building that seemed better suited to a class half the size.

St. Andrew Middle School, a LINC S school, is matched with Prairie Middle School in this study and has achieved Recognized Academic Growth in 2003-2004. The school is not in school improvement and is eligible for rewards from the state for performance. The school boasts a 94.4% attendance rate and 0 dropouts for the year. Twenty percent of the schools students are eligible for services under IDEA and 42% qualify for free or reduced price lunch. Ninety-eight percent of courses are taught by highly qualified teachers according to federal definitions.

Gabriel Oaks Middle School (GOM) is in School Improvement level 3 (out of a possible 6) and receives assistance from a state sponsored District Assistance Team. The school is located in an industrial area of a large city and has high administrative and teacher turnover. Gabriel Oaks' SPS for last year was 46.0 and the school will have to gain 6.9 points next year to meet Adequate Yearly Progress standards. Almost eighteen percent of students at Gabriel Oaks have recognized disabilities and 89% of the student population is eligible for free or reduced price

lunch. Only 89% of core courses at Gabriel Oaks are taught by highly qualified teachers.

Prairie Middle School (PMS) is located in a growing community in a rural district. A high chain-link fence surrounds the campus, but the overall mood is relaxed and friendly. Although PM is not in School Improvement and has achieved an SPS of 111.9, they were not eligible for state rewards last year because the growth they achieved was minimal (0.5.) Most of the classes at PM contain 21-26 students and 95% of core courses are taught by highly qualified teachers. Only 22% of students are eligible for free or reduced price lunch, but 13.7% are eligible for services under IDEA. PM students in all subgroups achieved Annual Yearly Progress last year.

Richmond Upper Elementary School (RUES) is located on one of the state's main waterways. Driving to the school, one passes sugar plantations and bayous dotted with shrimp boats. RUES was not eligible for rewards this year due to minimal academic growth (1.7). They are in School Improvement Level 1 and receive some assistance from the state. A little over one percent of students at RUES have limited English language proficiency and 16.2% receive services under IDEA. Only 79% of core courses are taught by highly qualified teachers as defined by the No Child

Left Behind act of 2001 and 79% of students are eligible to receive free or reduced price lunch. Fifty-eight percent of the classes at RUES have between 1-20 students, with no class larger than 26 students.

Although Green Oak Parkway Elementary School (GOP) has a Performance label of "Two Stars," they are in School Improvement 1 due to a 10 point decline in SPS last year. On the day I visited the office was packed with students who were calling home because they had forgotten to wear appropriate field trip attire. Through the chaos, I heard one barefoot boy try to explain to the secretary how he had forgotten his shoes on the bus. "Didn't you notice you didn't have any shoes on?" she asked. He just shrugged.

Eighty-two percent of students at GOP are eligible for free or reduced lunch and 12.9% receive services under IDEA. All subgroups made Adequate Yearly Progress according to NCLB standards for test and academic performance, including minority and disabled students. One hundred percent of core courses are taught by highly qualified teachers.

Research Question 1

The first research question addressed in this study is how does school climate affect teacher effectiveness in PARC schools? A matrix display strategy was used to

analyze interviews from 24 teachers (Miles & Huberman, 1994). According to Maxwell (1996), display strategies "make ideas and analysis visible and permanent and facilitate your thinking about relationships." (p79)

Interviews were conducted with six teacher-volunteers, selected by their respective principals, at each sampled PARC school. Teachers interviewed were selected by their respective principals to represent a range of teaching experience levels. To conduct the interview analysis, individual interview transcripts were entered into a matrix of affinities gathered from IQA interview analysis described later in this chapter. Transcripts were then compared across affinities and within interviews to identify individual and group themes. The matrix analysis allowed for the consideration of individual reality within the context of the classroom as well as the development of a more general theory of the relation between school climate and teacher effectiveness.

School climate variables were derived from the IQA focus group results described in Chapter 4 and refined after the individual interviews were analyzed. These variables include Principal, Time Issues, Stress, Responsibility, Teacher Retention, Academics, and Teacher Trust. School Effectiveness variables used to analyze

interview data were the same as for the teacher observations and were taken from the Louisiana Components of Effective Teaching (Louisiana Components, n.d.). These include: Maintains Environment, Maximizes Time, Manages Learner Behavior, Delivers Instruction, Presents Content, Provides for Learner Involvement, and Student Assessment. Results of the display analysis follow.

All teachers interviewed indicated that increased teacher trust has a positive affect on their classroom effectiveness by opening the lines of dialogue between teachers and making resources more readily available:

At this school, everyone presents their tidbits of information in a good manner. They will hand you the packet, "Look, I saw something..." I had another teacher, he's going to school for certification, and he's in a science class, and he's like "Ms. ..., Do you have a science activity?" "Here, take it."

I work mostly with the four-five teachers, we have our cluster meetings together, and I think we all work together very well. In talking about our students and talking about how we are teaching and what strategies we are using and saying, "I used this in this class and it worked really well, if you want to try it."

Interview data suggest school climate factors affect teacher behavior differently. Other factors that have a more variable affect on teacher classroom behavior are the

principal, time issues, and added responsibilities above classroom teaching. One teacher explained it this way:

I feel at times, and I've talked with the other teachers also, when are they going to leave us alone and let us teach? That's the main thing. There is so much other stuff going on that everybody is more concerned with getting this paper done or that done... We need to be in the classroom, we need to be teaching, we need to be planning our lessons and preparing our kids to move on. And there are a lot of times we get the feeling that there are so many responsibilities out there, other things that are being required of us, that we can't teach and that's what we want to do.

A sub-question of interest related to the above discussion is: Does school climate affect teacher performance similarly in LINCS, TAP, and comparison schools? Interviews indicated that school climate factors have similar teacher effects across all types of schools. Teachers in PARC Schools, however, described extra benefits afforded by the relationship-building process that occurs through PARC meetings. For example:

I would say the majority of time at the TAP meetings, there are positive outcomes and I do get benefit from them. I would have to say that overall I have enjoyed the experience.

The cluster meetings have been really helpful to me so those, I feel like, are good uses of my time... It has also been divided up throughout the year in a way that makes a lot of sense. There's a vocabulary cycle, a reading comprehension cycle where we focus on those strategies.

We have whole faculty study groups which are beneficial... I think it helps the teachers out to have a break a little bit, every couple of days. Whole faculty study groups do take up a lot of time but I can see the benefit.

We come together and we talk about what we are going to teach for the following week. Sometimes we take turns in terms of what we are going to do. We basically work together. If it is something, a bright idea that... I come up with then I'll share it with my other co-workers.

Teachers in TAP schools also mentioned the benefits of stronger accountability measures required by the program:

I think with cluster meetings and TAP there is added responsibility because you have to be very conscious of how you are teaching, but that's a good thing for me. I feel like I'm becoming a much better teacher because of TAP. The added responsibilities we have with that, like having to show strategies we talked about at cluster meetings, we have to show them in our lesson plans. I think that's a good thing because it forces us to use that strategy in the classroom which is what it's all about. So the TAP program... I think is good at making us into effective teachers.

Most teachers reported participation in PARCs was a win-win situation, allowing them to tune their craft with little extra effort:

I learned something. I could take something out of each one so I don't see it as an added

responsibility or something that I have to do that I don't want to do.

Only one teacher felt there was nothing PARC meetings could offer her:

I have been teaching 38 years. I have been through school. I have been in the work world. I know what these children need. I feel like all of these things are... just a waste of time. Of course my situation is a little different from the other situations. I feel like these are not beneficial to me personally.

In most schools, teachers' perceptions of climate have an effect on teacher performance. Teachers who believe PARC participation is valuable and promotes a positive climate also report being more willing to use current best practices regularly in classroom teaching.

Each school climate factor and its effects will be discussed in detail in the Composite Theoretical Affinity Descriptions in the next section.

Research Question 2

The following description of the IQA results will offer insight into Research Question 2: Do the interview data substantiate the hypothesized relationship system created by the IQA Focus Group exercise?

Identifying Affinities

The 24 Participants in the IQA interview phase agreed with the list of affinities created by the focus group

process described in Chapter 4. Each interview was completed separately, one-on-one with the researcher. When asked if any affinities should be added or deleted, all interviewees concurred that the original list of seven affinities was definitive. Therefore, affinities included in the Interview Protocol (Appendix 1) and in the Final Combined Theoretical Code Frequency Table (Table 4.) are the same as decided by the focus group and are listed, with expanded definitions, in table 5.2.

Table 5.2.

Final PARC Interview Protocol Affinities and Affinity Names

Affinity Name	Affinity Description
1. Principal	Principal and Leadership Characteristics including willingness to listen and problem-solving style
2. Time	Time Issues created by added responsibilities from PARCs and accountability measures
3. Stress	Stress caused by varying factors such as accountability, time pressures, and student discipline issues
4. Retention	Teacher Retention and School Climate including safety, parent involvement, and salary issues
5. Responsibility	Added Responsibility due to PARCs and other factors such as accountability policies and extracurricular activities
6. Trust	Trust issues such as teachers tattling on one another and desire to socialize outside of school

Table contd.

7. Academics	Strong Academic Tradition including high expectations from parents, teachers, students, and administration
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Composite Theoretical Descriptions

During the interview process, participants were asked to expand upon the definitions of each affinity created by the focus group. An expanded discussion of each affinity follows.

Principal and Leadership Characteristics (including willingness to listen and problem-solving style).

Participants agreed almost unanimously that the principal is the single most important factor in establishing the climate of the school.

In less effective schools the teachers tried to show compassion for the principals' work situation and tended to blame any leadership problems on impersonal factors:

I wouldn't want to be in her position... As far as leadership, she does what she has to do... I think the biggest issue for her being principal is trying to make all the teachers happy and educate her students at the same time...

I know she's pulled out for a lot of stuff... It's not her fault but sometimes when we need her, she may not be here.

I feel that when she is under stress, she has a hard time dealing with the issues at school. I feel that this year has been a lot worse than last year with the leadership issue. In fact, I

asked for a transfer... I feel that this year there is no leadership.

In one particularly less effective school, Frances Doormand Elementary School, most teachers were concerned with consistency problems exhibited by the leadership. These problems involved some discipline issues, but teachers were most concerned with the principal's tendency to move teachers to new classes and grades during the school year:

Our principal is, she's very devoted and passionate about education and about this school and these kids... On the other hand, she is very inconsistent with other factors. For example, grade level changes. Some teachers have switched grades this year before the third nine weeks started, which has a huge impact on teacher morale and job security... Also, she's inconsistent with discipline...

My dealings with my principal have been most concentrated when I switched grade level positions which, to me, happen quite frequently here. Some of my interactions with her then were very negative. She tends to make decisions very quickly and doesn't provide much announcement to the faculty...

On the other hand, in the more effective schools, the comments regarding the principal were overwhelmingly positive:

She is a good leader. Probably the best principal that I have ever been with, ever. She's really focused on making sure we are like a community.

Time Issues (created by added responsibilities from PARCs and accountability measures.) Participants were divided on how much time issues added to the general culture of the school. In all schools, participants were divided on whether there were time issues created by being in a PARC School at all.

Those faculty study groups are fine. It's usually during my planning period or early dismissal days. But we do have this thing this year that we have to stay after school on Wednesdays from 2:30 to 4:30 to do our lesson plans for the next week... That is the only time issue I have here.

The time issue is a problem. Because two of our plannings are taken with cluster groups, that means that the other administrative things you need to do are not getting done. So you're either going to stay after school, stay before school, and you wind up finding more and more of your personal job becoming late and you don't like that... Plus you have observations... we know that even as a regular teacher on a regular day you wouldn't teach like you would on an observation day... which means you have extra planning... you have more observations now that you're a TAP school and you have less time...

Five of six teachers interviewed in the TAP school indicated that time was less of an issue than teachers in LINCS schools did. This is although TAP teachers spend more time in cluster meetings (two 45 minute meetings per week) than LINCS teachers do in study groups (two hour-long meetings per month.)

We have our cluster meetings during our planning period twice a week. I don't have a problem with

that. The only hardship with that was when we were doing LEAP tutoring. We did that during our planning period as well so our planning time got dramatically cut down for those couple of months... The strategies we learn in cluster a lot of times maximize our instructional time...

I don't really have any negative time issues. The cluster meetings have been really helpful to me so those, I feel like are a good use of my time. So we have three hour long planning periods a week, which is more than enough for me and a half hour for lunch... There is plenty of time as far as planning goes... Cluster meeting is time spent really well. There are lessons that are modeled and we actually make materials that we can take into our classrooms which is really helpful.

This finding suggests that having the cluster meeting time protected and reserved for PARC goals in TAP schools allows the teachers to more easily build the time into their schedules, whereas LINCS teachers feel the group meetings are less regularly scheduled and structured and may feel like the time is an inconvenience rather than a support to their teaching abilities.

Stress (caused by varying factors such as state and federal accountability, time pressures, and student discipline issues.) Participants in this study divided the stress they felt on the job into "good" and "bad" stress. They reported that good stress served as a motivator, compelling them to strive to be better teachers. While all

teachers acknowledged the presence of "good" stress, two reported they only felt "bad" stress.

I think stress is good. You need a little bit of stress to push you forward and compel you to accomplish things...

With the cluster meetings, its been a good stress for me because it has really pushed me to become a better teacher because I know that I'm going to be evaluated and that these evaluations count for something... throughout the year I've seen areas that I have grown in and I've seen areas that I could use improvement in and so for me, it has been a motivating factor.

The teachers also reported a close connection between stress and time issues, but only three teachers attributed stress to discipline issues:

There's a lot of stress and it goes with time. The stress and time go together. I have stress because I don't have time to do the things I need to do... that's where the stress comes in. Not with the kids, not with the administration. It's the time to do everything I need to get done.

Teacher Retention and School Climate issues (which influence teachers' decisions to continue employment or consider leaving a particular school including safety, parent involvement, and salary issues.) The comments regarding teacher retention were sharply divided (10 negative to 12 positive) along effectiveness lines. Teachers at less effective schools reported high turnover and low motivation to remain employed at their respective schools. Teachers at more effective schools, however, reported no plans to move. Each teacher had different theories as to why teachers at their school choose to stay

or leave including administration, programs, or student discipline:

Last year, I don't think many teachers put in for transfer. I think this year over 70% of the faculty did. Consistency. Changes. We do one thing one week and then the next week we get used to what we've been doing, or we'll do it for four months and then one day it all of a sudden changes.

This school seems to be pretty good as far as teacher retention. Most of the teachers I have talked to have been here for quite a while... I think a lot of it has to do with the TAP program. I know that one of the girls that [were] here with the TAP program pretty much stayed on because of it, made a commitment to it...

I've been here three years and every year we get like three or four new teachers because people left... We keep teachers. I think it is the behavior problem in the other classes. That's why teachers leave, because we are inner city and our kids come from these awful things... I think teacher retention and student behavior is the correlation.

Added Responsibilities (due to PARCs and other factors such as accountability policies and extracurricular activities.) Teachers reported more responsibility due to paperwork and other administrative duties than due to participation in the PARC process. They felt the added responsibility was a function of the teaching profession and was to be expected:

We always [prepare PARC meetings] as a whole so you never really have too much individual responsibility. Usually its: we'll meet in groups as a team or as a subject team. So I

don't ever feel individual responsibility, having to come up with something...

Your responsibility is to be a part of the group. Depending on our faculty we measure it by the month and as a group we work really well together and we bounce around ideas about what we should do for the rest of the teachers in K-2. We all have a part in putting together an outline for what we feel would best meet that particular month's Grade Level Expectations... We each take a different part. I feel like we are all mature and sometimes maybe one person wanted to do maybe a little bit more, but I think that we all feel confident that everyone is trying to work together.

The whole faculty study group, for me, wasn't a big stress because I just came from a parish using corrective action, so I was familiar with the process. We had a lot of time to meet for our professional days and then our half days...so, it's not a lot.

Trust issues (such as teachers tattling on one another to the administrators and their desire to socialize outside of school with other faculty members.) Teachers across the board reported an increase in faculty trust due to participation in PARCS. Fifteen teachers discussed an appreciation for the sharing and critiques afforded during PARC meetings.

We are just like one big family. If you have a question, you go ask somebody and if they can't help you, you move to the next person. If I'm doing something wrong and someone sees it, if they let me know, I don't have a problem with it.

I feel, especially the TAP cluster meetings have fostered that trust and I feel very comfortable

getting advice from and interacting with most all of the faculty members.

Strong Academic Tradition (including high expectations from parents, teachers, students, and administration.)

Another division in effectiveness becomes apparent when analyzing participant comments on academic tradition.

Teachers at less effective schools reported a tradition of low expectations for and from students and parents. They also discussed the challenge of trying to raise expectations in such an environment:

I think that everyone at this school tries to have high expectations for their students. I think it's hard because we have so many students who are failing... We have problems getting parents to come to activities, to come to conferences, things like that... We'll say we are having a math and science night and send out flyers and we'll expect a lot of parents to come, but at the same time we are saying, 'Nobody is going to show up...' That's how it's been for so many years, so I think that affects what we expect out of parents.

The expectations are high. I think it is carried over from the principal to the classroom. It doesn't always disseminate to the parents.

My kids are obviously high in their academics because that is very important to them and their parents. I find it interesting that the parents of my students are here a lot and if I call or need something they are here. In their mind, that is the most important thing they could ever do. In other classes...you see no parental involvement. It is not important to them. They don't see school as something that needs to be important. They think more along the lines of 'What can I do to make a lot of money.' They don't see the future.

Theoretical Code Frequency Table

In the second phase of the individual interview process, participants were asked to define the relationships between each possible affinity pair by indicating the direction of the relationship in a table (Appendix 5). For example 1>2 translates to Affinity 1 (Principal) influences Affinity 2 (Time Issues). On the other hand, 1<2 would translate to Affinity 1 is influenced by Affinity 2. Table 5.3 shows the frequency with which participants reported each possible relationship. The Theoretical code Frequency Table is analogous to the Affinity Relationship Diagram used in the focus group analysis and Described in Ch. 4.

Table 5.3.

Final Theoretical Code Frequency Table for All Possible Affinity Relationships

Affinity Pair Relationship	Frequency		
		1 > 7	15
		1 < 7	3
1 > 2	13	2 > 3	16
1 < 2	7	2 < 3	2
1 > 3	10	2 > 4	6
1 < 3	8	2 < 4	1
1 > 4	12	2 > 5	9
1 < 4	1	2 < 5	10
1 > 5	14	2 > 6	1
1 < 5	3	2 < 6	4
1 > 6	15		
1 < 6	2		

Table contd.

2 > 7	16	4 < 5	14
2 < 7	4	4 > 6	0
3 > 4	14	4 < 6	7
3 < 4	2	4 > 7	2
3 > 5	5	4 < 7	11
3 < 5	13	5 > 6	5
3 > 6	6	5 < 6	6
3 < 6	3	5 > 7	12
3 > 7	11	5 < 7	8
3 < 7	6	6 > 7	9
4 > 5	0	6 < 7	2

Pareto Protocol

In the IQA interview process, a Pareto Chart is created for two purposes:

1. To determine the optimal number of relationships to comprise the composite system, and
2. To help resolve ambiguous relationships, which are relationships that attract votes in either direction (Northcutt & McCoy, 2004, p.157)

To create a Pareto Chart, relationships reported on the Theoretical Code Frequency Table (Table 5.3) are ordered by frequency and cumulative frequencies and percentages are calculated (Table 5.4). In the focus group analysis described in Chapter 4, a vote was used to identify relationships. For the IQA interview analysis,

however, the frequencies of the theoretical codes determine the direction of the relationships between affinities.

Cumulative frequencies are computed for both the percentage of total relationships- Cumulative Percent (Relation), and for the percentage of the total number of possible relationships based on the number of responses received- Cumulative Percent (Frequency). According to Northcutt and McCoy (2004, p. 160) power is calculated as the difference between the Cumulative Percent (Frequency) and the Cumulative Percent (Relation) and a cut point is chosen based on the MinMax criterion in which maximum variation is accounted for while the number of relationships is minimized. Table 5.4 shows the resulting Pareto Chart.

Table 5.4.
Pareto Chart

<u>Column 1</u> Affinity Pair Relation -ship	<u>Column 2</u> Freq Sorted (Desc.) ⁶	<u>Column 3</u> Cum Freq	<u>Column 4</u> Cum Percent (Relation) ⁷	<u>Column 5</u> Cum Percent (Freq) ⁸	<u>Power⁹</u> <u>Column 5 minus</u> <u>Column 4</u>
2 > 3	16	16	2.4	5.2	2.8
2 > 7	16	32	4.8	10.4	5.6
1 > 6	15	47	7.1	15.3	8.1

⁶ Frequency represents the total frequency of votes cast for an affinity pair.

⁷ Cumulative Percent (Relation) represents the cumulative percentage based on the number of total possible relationships.

⁸ Cumulative Percent (Frequency) represents a cumulative percentage based on the number of votes cast. Each entry is the percentage of votes cast for an affinity pair added to the previous total.

⁹ Power is an index of the degree of optimization of the system and is simply the difference between Cumulative Percent (frequency) and Cumulative Percent (Relation) (Northcutt & McCoy, 2004).

Table contd.

1	>	7	15	62	9.5	20.1	10.6
1	>	5	14	76	11.9	24.7	12.8
3	>	4	14	90	14.3	29.2	14.9
4	<	5	14	104	16.7	33.8	17.1
1	>	2	13	117	19.0	38.0	18.9
3	<	5	13	130	21.4	42.2	20.8
1	>	4	12	142	23.8	46.1	22.3
5	>	7	12	154	26.2	50.0	23.8
3	>	7	11	165	28.6	53.6	25.0
4	<	7	11	176	31.0	57.1	26.2
1	>	3	10	186	33.3	60.4	27.1
2	<	5	10	196	35.7	63.6	27.9
2	>	5	9	205	38.1	66.6	28.5
6	>	7	9	214	40.5	69.5	29.0
1	<	3	8	222	42.9	72.1	29.2
5	<	7	8	230	45.2	74.7	29.4
1	<	2	7	237	47.6	76.9	29.3
4	<	6	7	244	50.0	79.2	29.2
2	>	4	6	250	52.4	81.2	28.8
3	>	6	6	256	54.8	83.1	28.4
3	<	7	6	262	57.1	85.1	27.9
5	<	6	6	268	59.5	87.0	27.5
3	>	5	5	273	61.9	88.6	26.7
5	>	6	5	278	64.3	90.3	26.0
2	<	6	4	282	66.7	91.6	24.9
2	<	7	4	286	69.0	92.9	23.8
1	<	5	3	289	71.4	93.8	22.4
1	<	7	3	292	73.8	94.8	21.0
3	<	6	3	295	76.2	95.8	19.6
1	<	6	2	297	78.6	96.4	17.9
2	<	3	2	299	81.0	97.1	16.1
3	<	4	2	301	83.3	97.7	14.4
4	>	7	2	303	85.7	98.4	12.7

Table contd.

6 < 7	2	305	88.1	99.0	10.9
1 < 4	1	306	90.5	99.4	8.9
2 < 4	1	307	92.9	99.7	6.8
2 > 6	1	308	95.2	100.0	4.8
4 > 5	0	308	97.6	100.0	2.4
4 > 6	0	308	100.0	100.0	0.0
Total Freq.	308	Equal Total Freq.	Equals 100%	Equals 100%	Power = E-D

The optimal number of relationships is selected based on two criteria, maximizing possible variance explained and minimizing the total number of relationships used. Figure 5.1 shows a power analysis graph for the Pareto Table used to determine how many relationships should be retained.

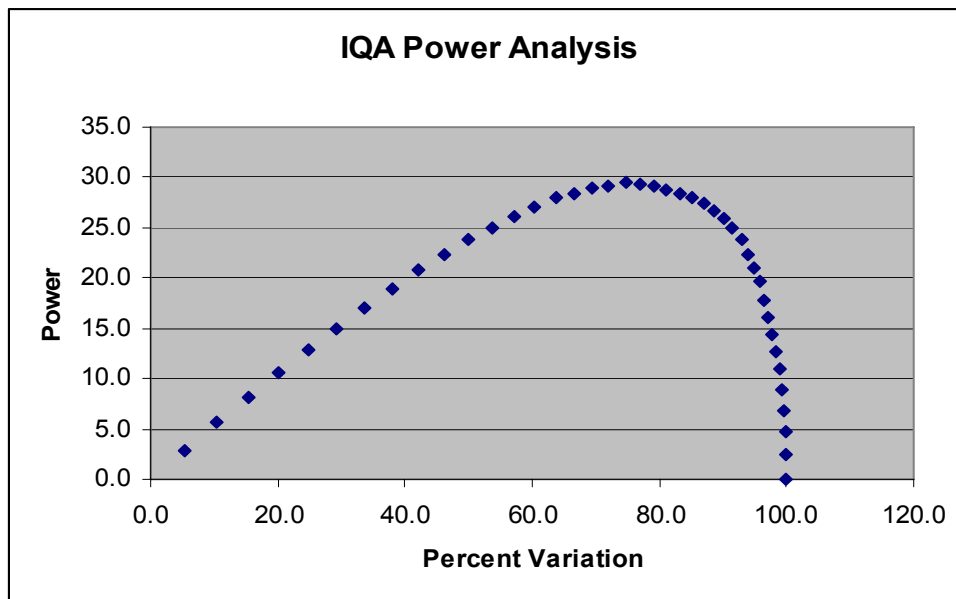


Figure 5.1. IQA Power Analysis Graph

For this project, power is maximized when the Cumulative Percent (Frequency), or Percent Variation, approaches 80 (in this case, 74.7 is the number nearest and below the 80 percent cut off). A minimum power of .80 was chosen as an acceptable level because it corresponds with an alpha of .10, an acceptable level of statistical confidence for educational studies. Referencing the Pareto Chart (Table 5.4), Power reaches its maximum and the Cumulative Percent (Frequency) reaches 80 after 21 relationships. Therefore a maximum of 21 relationships were considered. After analyzing possible conflicting relationships in which reciprocal relationships were reported, the final number of relationships was reduced to 18.

Cluttered System Influence Diagram (SID)

The visual representation of the model resulting from the initial Pareto analysis is called a cluttered SID because all relationships are represented. Figure 5.2 shows the cluttered SID for this study. The cluttered SID is shown in a circular representation so all links are clearly visible.

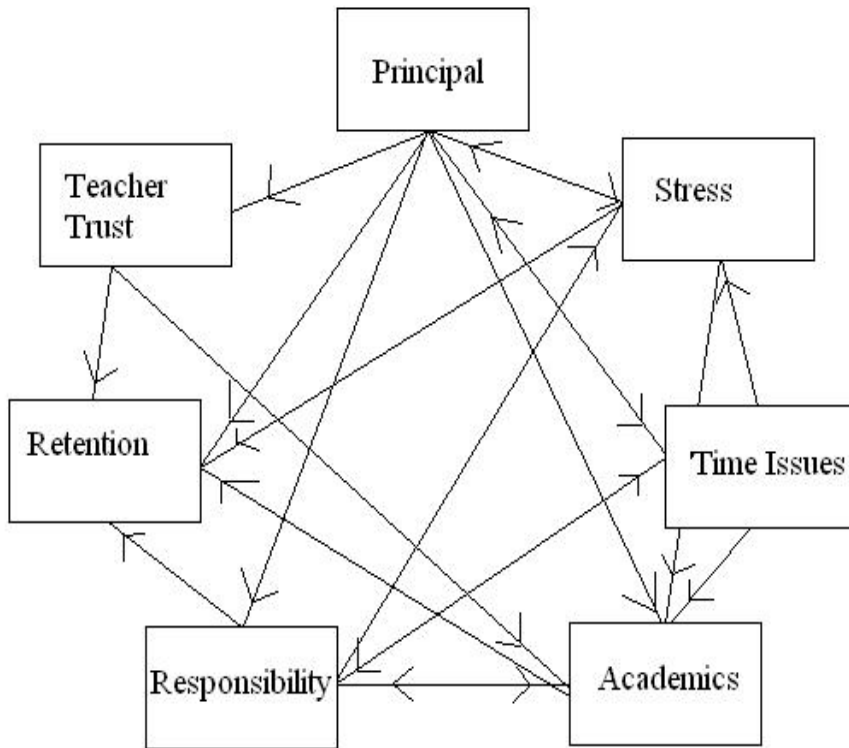


Figure 5.2. Cluttered Systems Influence Diagram (SID)

Redundant links, or links between two affinities that can be removed without disturbing the path from the driver to outcome, are removed to create the Final SID. For example, a link exists from Principal through Teacher Trust to Retention. Therefore, the direct link from Principal to Retention can be removed. Figure 5.3 shows the SID with the redundant link from Principal to Retention removed.

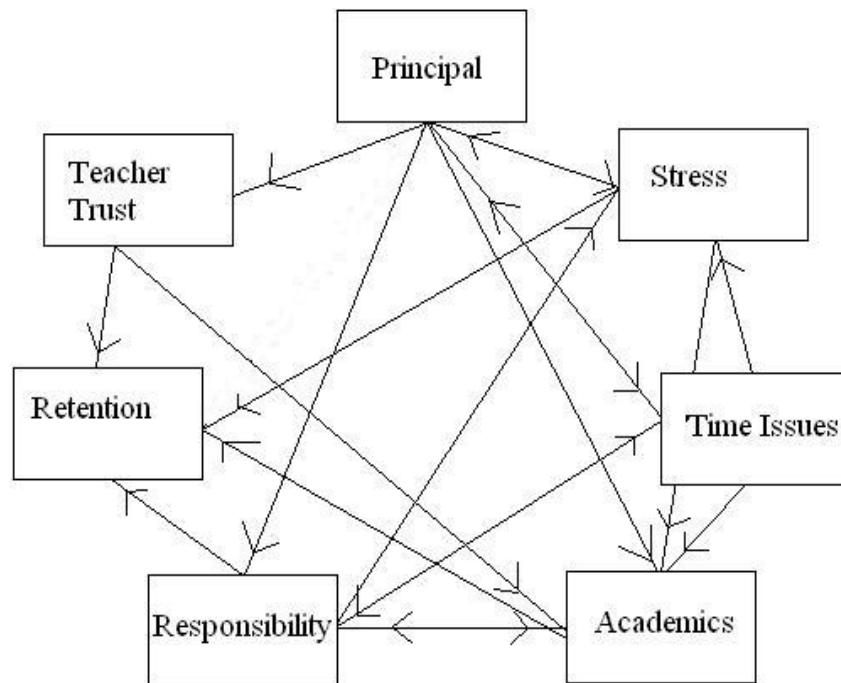


Figure 5.3. Cluttered SID with Redundant Link from "Principal" to "Retention" Removed

Clean System Influence Diagram (SID)

In the creation of the Clean SID, the model is displayed topologically with drivers represented on the left and outcomes on the right. According to Northcutt and McCoy (2004, p,180), "Every system has a unique, simplest representation, topologically speaking. Two different analysts working from the same protocol on the same IRD will produce the same Uncluttered SID." Just as with the creation of the focus group SID explained in Chapter 4, Affinities are ordered as Drivers or Outcomes according to

the amount of influence they exert on other affinities. For example, affinity 1, "Principal" influences all of the other six affinities as illustrated in the Pareto Chart, Table 5.4. In the 18 relationships that were retained from this chart affinity 7, "Teacher Trust" only directs influence over two affinities, 5 and 4. Therefore "Principal" is designated a Primary Driver within this system and "Teacher Trust" becomes a Primary Outcome. The Clean SID is presented in figure 5.4.

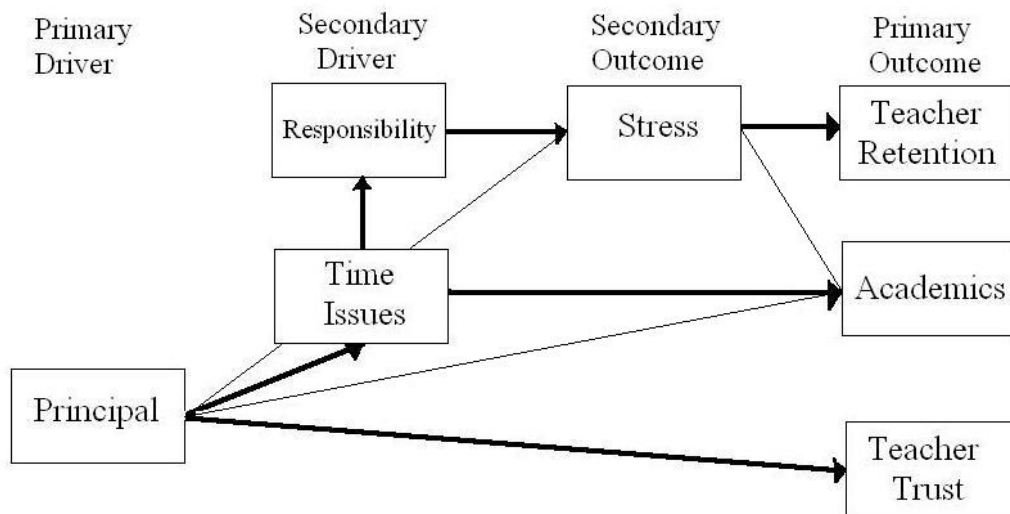


Figure 5.4. Clean SID

To regain some of the explanatory power of the Cluttered SID, some redundant links, necessary to the explanatory power of the model, were reinserted into the Clean SID and represented with lighter-colored lines. The link from Principal to Stress was reinserted to illustrate

the relationship teachers reported with the principal as being the cause of stress indirectly through assignments and policies.

The Participants also indicated that the principals' goals, policies, and actions were an important determinant in the academic expectations of the school. Therefore, the indirect link between Principal and Academics was reinserted. The reinsertion of these two links also highlighted a third indirect relationship between Stress and Academics which was not strong enough to be included in the original model, but was reinserted to acknowledge that teachers reported their stress, both "good" and "bad" has a definite impact on their schools' academics.

Interpreting the Clean SID

As demonstrated in figure 5.4, the school principal is the primary driver in the climate of the school. The primary outcomes are teacher retention, academic tradition, and teacher trust. Considering a traditional cause and effect system, we could say that the principal is the most important factor in a school's teacher turnover and camaraderie, and in the school's academic expectations and performance.

A Tour through the System

As the primary driver, the school principal influences each factor in the system either by direct or indirect relationships. Two direct influences mined from the IQA process are influences on time issues and teacher trust. In a PARC school the principal has a direct influence on both how much time for planning and collaboration is available to teachers and how available time is used. In PARC schools with a more positive school climate, planning/collaboration time is created and guarded by the principal. Administrative tasks for teachers are kept to a minimum and there are fewer interruptions during planning and instruction.

The principal also has a direct and strong influence over the trust faculty members feel toward each other. In schools with a negative school climate, tattling and backbiting are tolerated and may even be encouraged by administration. Collaboration and socializing among staff are not encouraged. In schools with a more positive school climate, however, the principal encourages teachers to share ideas and strict standards of professionalism are enforced by administration.

The principal in a PARC school also has an indirect influence over the stress teachers feel through time-

related issues. Although teachers acknowledged that the principal influences many factors related to school climate, they reported time issues as causing them the most stress. It is important to remember that teachers in this study described both "good" and "bad" stress. In situations where time was managed wisely and teachers felt they had adequate time for study and planning, they reported stress as making them feel energized and motivated to become a better teacher. The opposite was true in situations where teachers felt time was wasted on non-instructional duties. Teachers in this situation felt overwhelmed and unable to get things done. Since the principal is the major influence on how responsibility is handed out and how time is managed, the "Principal> Time> Responsibility> Stress" link is possibly the most important in the school climate model.

Time issues also had a direct influence on the academics in PARC schools. Teachers commented, "If we don't have time to teach, of course academics are going to suffer." On a larger scale, however, teachers felt that the time management problems at a school had an influence on the academic *traditions* and *expectations* at that school. For example, if teachers' time for planning and instruction

was not valued, teachers felt academics as a whole lost value at their school.

It was not surprising to find that teachers associated the level of stress felt in a school's climate with the school's ability to retain teachers. Study participants ultimately agreed that stress was the most important factor related to teacher turnover.

The last link in the PARC School Climate Model is a secondary link between the principal and the academic tradition of a school. Although this link has been explained by the indirect route of "Principal> Time> Responsibility> Stress> Academics," the direct "Principal> Academics" link received enough votes in the ART(Affinity Relationship Table) to warrant representation in the model. The direct link, although secondary, underscores teacher's beliefs that the administration is the single most important influence on the overall attitude towards academics at a school.

Using IQA in a Mixed Methods Study

A second sub-question related to the IQA process is: What are the advantages and disadvantages of using IQA in a mixed methods study?

Ease of Analysis

The steps in IQA data collection and analysis are described in great detail (Northcutt & McCoy, 2004). The process is further facilitated with the inclusion of templates and tables that order the collection and analysis in a step-by-step process. In addition, Northcutt and McCoy provide a Microsoft Excel template with their 2004 text to assist with affinity analysis and power calculation. Some effort on the part of the researcher is also removed by the use of participant analysis for the axial and theoretical coding. Although IQA is ultimately a detailed and time-consuming undertaking, the process is aided by tools made available to the researchers by the IQA creators.

Participants Confused by ART

Part of the interview process requires each interviewee to complete an ART (Appendix 5). Throughout the interview phase, some participants reported feeling uncomfortable with the ART format (Chapters 4 and 5, this text). These interviewees said they were confused by the directionality and were sometimes unsure of how the influence should be documented. Many participants were unhappy that they could not declare dual relationships, for example, "A" influences "B" and "B" influences "A". For example, approximately

two-thirds of the participants indicated that the relationship between Principal and Stress was reciprocal. They stated that while they felt the principal was responsible for stress that they (as teachers) encountered the principal was surely also affected in his/her behaviors by stress resulting from federal and state accountability and district pressures.

Organization Within the Process

The IQA process is built around an inherent organizational system in which the analysis spirals along with the data collection to form a cycle of phases ending in a completed analysis. This organizational system keeps the process from becoming overwhelming even though IQA is still mostly uncharted territory. Each phase of the IQA process leads the researcher naturally into the next phase of analysis and the process can be replicated with little alteration to new research projects.

Confidence in Results

The creators of the IQA process built a system which is intended to withstand tests of rigor in academic debate. According to Northcutt and McCoy (2004), IQA contains academic rigor in that it:

- Requires public and non-idiosyncratic data collection and analysis,

- Requires data collection and analysis to be replicable, and
- Requires that data collection and analysis not depend on the researcher or elements being investigated.

Difficulty in Explaining Process

While the process is easily spelled out in manuscript form (Northcutt and McCoy, 2004), explaining the process to colleagues, in limited-text proposals, and most importantly, to research participants can be compared to speaking an undiscovered language. While the task of interpreting and undertaking a previously untried research method is exciting, there is an isolation involved in having only a handbook to look to for procedural advice. Participants, who may be wary of a stranger coming into their classroom to observe and interview them, are pushed to panic when they see the strange tables they will be asked to complete. The rapport and empathy brought in by the researcher in this unfamiliar process is invaluable.

Difficulty in Reporting Results

The IQA process is a thorough, albeit large undertaking. The process results in huge amounts of data, results, and implications. The resulting write-up,

containing and explaining all the nuances of the IQA process must be equally as thorough. When IQA is added to a mixed methods study, the undertaking is almost doubled. Until IQA becomes a common enough research practice that the entire process won't have to be detailed in the final report, researchers should consider the magnitude of the undertaking before adding it to a mixed methods study.

Chapter Summary

In this chapter the results of the qualitative analysis were addressed and the IQA process as used in a Mixed Methods study was examined. This chapter was divided into three sections: Section 1 addressed the sample from which the qualitative data were gathered. Section 2 answered the question- "How does school climate affect teacher-effectiveness in PARC schools?" Section 3 addressed the interview data and finalized the school climate relationship system begun in the IQA Focus Group exercise. Research Question 2: "Do the interview data substantiate the hypothesized relationship system created by the focus group IQA exercise?" was explored. The chapter concluded with a review of the IQA process.

Chapter 6 Quantitative Results

This chapter will present the results associated with the quantitative data analyses in this study. Quantitative data were collected through mail surveys, classroom observations, and state-generated school accountability reports. This chapter will begin with a description of the samples that generate the quantitative data. The second section will summarize differences in school performance scores between PARC and comparison schools. The third and fourth sections will address the differences in teacher effectiveness between PARC and comparison schools and explore differences in school climate. The chapter will conclude with a summary of quantitative findings.

Description of Samples

For the quantitative phase of this study two samples were used. The observation sample consisted of six teachers, selected by their principal, at each of eight schools. Schools selected were LINCS, TAP, or comparison schools and were matched on community type and school performance. The teachers selected at each school varied in terms of grade level, teaching experience and, according to some principals, teaching ability. This sample was also

used for the IQA interview process described in detail in the previous chapter (e.g., Table 5.1).

The second sample used for survey and performance comparisons consisted of 165 schools. LINCS and TAP schools from all regions of the state were compared with a sample of comparison schools with similar grade configurations, community types, and baseline SPS. The comparison sample was randomly selected from a set of schools found to be comparable to LINCS schools by the Louisiana Dept of Education for an evaluation project the previous year (Noel & Gansle, 2003).

All analyses for the quantitative phase of this study were run using SPSS for Windows version 13.0. This quantitative phase was designed to test the following three hypotheses:

Hypothesis 1: Teachers in schools participating in PARCs will demonstrate higher levels of teacher effectiveness than teachers in comparison schools.

Hypothesis 2: School climate in PARC schools will be more positive than school climate in comparison schools.

Hypothesis 3: Schools participating in PARCS will demonstrate greater effectiveness than comparison schools.

School Effectiveness

Calculation of SPS

Louisiana's school accountability policy is detailed in Bulletin 111- Louisiana School, District, and State Accountability (Louisiana Administrative Code, 2005). This policy states that SPS ranging from 0.0 to 120.0 are calculated for each school using a weighted composite index derived from three or four sources including criterion-referenced (LEAP or Louisiana Alternative Assessment) and norm-referenced (ITBS) tests. All data sources and their corresponding weights are outlined in Table 6.1.

Table 6.1
SPS Calculation Weights

Indicator	Weight	Grades
CRT (LEAP)	60% K-12	4, 8, 10, 11
NRT (ITBS)	30% K-12	3, 5, 6, 7, 9
Attendance	10% K-6; 5% 7-12	K-12
Dropout Rate	5% 7-12	7-12

Starting fall 2004, two SPS were calculated for each school. Growth SPS, used for this analysis, are computed from CRT and NRT data from the prior school year, plus Attendance and/or Dropout data from the year two-years

prior. Growth SPS are used to assign growth labels, rewards, and academic assistance. Baseline SPS, which are used to determine performance labels and academically unacceptable schools, consist of the two prior school years' CRT and NRT data and attendance/dropout data from the two years prior to the most recent assessment year. Schools can earn 50 to 200 incentive points if repeating 4th or 8th grade students pass the retest with a score of "Approaching Basic" or above (Louisiana Administrative Code, 2005). Growth SPS was chosen for this comparison because it is the most straightforward measure of a school's change in performance from one year to the next.

Mann-Whitney Nonparametric Test for Two Independent Samples

Because the SPS used to compare growth in this study are computed using a variety of data types, differences in Growth SPS were computed using non-parametric tests. The Louisiana Dept. of Education computes SPS from a school's standardized test data and from attendance records. Standardized test data include scores from both criterion- and norm-referenced tests. Due to the use of norm-referenced scores, some researchers believe traditional, parametric tests are inappropriate for use in comparing SPS. Nonparametric tests are distribution-free, meaning researchers using these tests do not have to assume the

distribution of the dependent variable approximates normal. Additionally, analyses dependent on nonparametric tests do not have to be concerned with homogeneity of variance of the samples (Hinkle, Wiersma, & Jurs, 1998).

The nonparametric test selected for this analysis is the Mann-Whitney U test, which tests the hypothesis that two population distributions are the same for a specified variable. When the size of the sample for both groups is greater than 20, the sampling distribution of U approaches normal with a mean given by:

$$\mu_U = (n_1 n_2) / 2$$

where

n_1 = sample size for group 1

n_2 = sample size for group 2

and the standard error of U is given by:

$$\sigma_U = \text{sqrtrt}[(n_1)(n_2)(n_1+n_2+1)/12]$$

Therefore, the test statistic used is:

$$Z = (U - \mu_U) / \sigma_U \quad (\text{Hinkle, et. al., 1998}).$$

Since only one component of SPS (ITBS) consists of ordinal-level data and since the nonparametric tests used behave similar to parametric tests with large sample sizes, the researcher decided to run the SPS growth comparison with traditional t-tests in addition to the Mann-Whitney U

nonparametric test. Results of both analyses were similar and will be further explained below.

For the Mann-Whitney test, mean ranks were computed for the Growth SPS for both PARC and Comparison schools. These means are illustrated in table 6.2. Growth scores for this sample ranged from -24.3 to 36.9 with a sample mean of 2.021 and standard deviation of 7.50.

Table 6.2
Mean Rank Growth Scores for Mann-Whitney Test

Group	Mean Rank
PARC n=95	91.52
Comparison n=70	71.44

The mean ranks are provided for descriptive purposes and are not a part of the Mann-Whitney test. T-test analysis also provided descriptive statistics in the form of group means and standard deviations for the Growth SPS. This information is provided in table 6.3.

Table 6.3
T-Test Group Means and Standard Deviations for Growth SPS

Group	Mean	Standard Dev.
PARC n=95	3.207	8.37
Comparison n=70	0.41	5.82

Both tables 6.2 and 6.3 show mean growth scores that are higher for the PARC group than for the Comparison schools. These differences were found to be statistically significant through both the Mann-Whitney and Independent T-Tests. Table 6.4 shows results of both tests.

Table 6.4
Means Comparison Test Results

Test	Test Statistic	Significance
Mann-Whitney U	$z = -2.667$	$p = 0.008$
T-Test	$t = -2.401$	$P = 0.017$

Both non-parametric and parametric comparisons indicated PARC schools showed higher growth in SPS than Comparison schools for the 2004-05 school year. This finding presents not only statistical significance, but practical significance in light of pressures placed on schools to show yearly growth. This analysis indicates that, on average, LINCS and TAP schools grow 3 points more in yearly SPS than similar comparison schools.

Teacher Effectiveness

Observation Protocol

Classroom observations for this study were conducted using the Louisiana Components of Effective Teaching (LCET). The LCET are Louisiana's standards for all

classroom teachers. The components were created by an advisory panel that gathered information from research-based teacher assessment documents from eight states as well as the position paper of the Teacher Evaluation Advisory Commission (Louisiana Components, n.d.).

The Louisiana Teacher Assessment Program was implemented in 1994. Since then, the program has expanded with the addition of a one-year assistance period; therefore, the program is now called the Louisiana Assistance and Assessment Program (LATAAP). During the assessment period, a teacher must complete portfolio entries, interviews, and be observed by assessors on two occasions. The observation instrument, which was utilized for this study, consists of two of the Effectiveness domains: Management and Instruction. Each domain is further divided into Components and Attributes, on which teachers are rated. Table 6.5 lists the corresponding components and attributes for LCET Domains II and III.

Table 6.5
LCET Domains II and III with Components and Attributes

LCET Domain II, Management

<u>Component</u>	<u>Attribute</u>
A. The teacher maintains an environment conducive to learning.	<u>IIA1</u> . Organizes available space, materials, and/or equipment to facilitate learning

Table contd.

	<u>IIA2.</u> Promotes a positive learning climate
	<u>IIA3.</u> Promotes a healthy, safe environment
B. The teacher maximizes the amount of time available for instruction.	<u>IIB1.</u> Manages routines and transitions in a timely manner
	<u>IIB2.</u> Manages and/or adjusts time for activities
C. The teacher manages learner behavior to provide productive learning opportunities.	<u>IIC1.</u> Establishes expectations for learner behavior
	<u>IIC2.</u> Uses monitoring techniques to facilitate learning

LCET Domain III, Instruction

Component

Attribute

A. The teacher delivers instruction effectively	<u>IIIA1.</u> Uses technique(s) which develop(s) lesson objective(s)
	<u>IIIA2.</u> Sequences lesson to promote learning
	<u>IIIA3.</u> Uses available teaching materials to achieve lesson objective(s)
	<u>IIIA4.</u> Adjusts lesson when appropriate
	<u>IIIA5.</u> The teacher integrates technology into instruction

Table contd.

B. The teacher presents appropriate content

IIIB1. Presents content at a developmentally appropriate level

IIIB2. Presents accurate subject matter

IIIB3. Relates relevant examples, unexpected situations, or current events to the content

C. The teacher provides opportunities for student involvement in the learning process

IIIC1. Accommodates individual differences

IIIC2. Demonstrates ability to communicate effectively with students

IIIC3. Stimulates and encourages higher-order thinking at the appropriate developmental levels

IIIC4. Encourages student participation

D. The teacher demonstrates ability to assess and facilitate student academic growth

IIID1. Consistently monitors ongoing performance of students

IIID2. Uses appropriate and effective assessment techniques

IIID3. Provides timely feedback to students

For State Professional Accountability purposes, teachers are scored either a 1 or a 2 for each component, indicating the presence or absence of each behavior. In

this study, however, the range of possible scores was expanded to include a zero with the following score values:

- 2- Behavior mostly present
- 1- Behavior exhibited at least once
- 0- Behavior not observed

This allowed for slightly more descriptive power within each observation.

Independent Samples T-tests were computed to test for mean differences in PARC and Comparison teacher effectiveness scores at the p= .05 level of significance. For overall effectiveness teachers in both PARC and Comparison schools exhibited equally effective classroom practices (t=-.26, p=.80). Test results presented in Table 6.6 indicated no statistically significant difference between the two groups in terms of effective classroom teaching behavior.

Table 6.6
Independent T-test Results- Overall Teacher Effectiveness

Group	Mean	SD	t	p
PARC n=22	1.42	.32	-.26	.80
Comparison n=14	1.45	.26		

Although there were no significant differences between PARC and Comparison teachers overall effectiveness, there

was a notable difference between teachers who voiced support for PARCS in the interviews and those who didn't.

In addition to testing for differences in overall effectiveness, t-tests were run to compare effectiveness of PARC and Comparison schools on each domain. Results are presented in Tables 6.7 and 6.8. For both Instruction and Management components, teachers in PARC and Comparison schools again showed equal effectiveness at the $p=.05$ significance level.

Table 6.7

Independent T-test Results- Instructional Effectiveness

Group	Mean	SD	t	p
PARC	1.63	.44	.39	.70
Comparison	1.58	.33		

An examination of mean scores for instructional effectiveness shows a slightly higher average score for PARC teachers. This level might indicate a practical improvement in instruction due to PARC participation that might be statistically magnified in future studies if more sensitive instruments or larger samples are used.

Table 6.8

Independent T-test Results- Management Effectiveness

Group	Mean	SD	t	p
PARC	1.31	.30	-.68	.50
Comparison	1.38	.26		

Does Everyday Teaching Match Observed Behavior?

Although the observation phase of this study was informative, a single observation per teacher may not have been enough to uncover differences in teaching behavior. Over multiple, sustained periods of observation true or "everyday" teaching behavior may have been demonstrated and may have yielded more insight into subtle differences between PARC and comparison teachers if, in fact, such differences exist. As mentioned in chapter 5, teachers in the interview phase reported that prolonged observations were more likely to change their classroom behavior than single observations because it is easier to prepare to impress an observer once. Multiple observations force a teacher to adopt the impressive methods because adoption is easier to sustain than performance when a teacher must be "on-guard" waiting for the next visit. As stated by the TAP Director for the State of Louisiana, Teddy Broussard, explains, "When everyday- behind closed doors- teaching is

the same as what happens during observations, that's when real change happens!" (Broussard, 2005).

School Climate

A school climate survey was sent to three teachers at each school in the larger sample of 165 schools. Survey questions were taken from a 10th grade teacher questionnaire used in the 1990 follow-up of the National Educational Longitudinal Study (NELS) which was issued by the National Center for Educational Statistics. Researchers studying this questionnaire constructed four composite variables from indicators in the NELS data set. One of the composite variables was described as School Climate and was divided into five factors using principal components analysis rotated to a direct oblimin solution (Taylor and Tashakkori, 1995). The five factors included in this subset were: Principal Leadership, Student Discipline, Faculty Collegiality, Lack of Obstacles to Teaching, and Faculty Communications. The School Climate subset of questions described in the Taylor and Tashakkori study were used as the Climate Survey in the present study with response choices set on a 4-point Likert scale (see Appendix 2).

Independent T-tests were again used to seek out differences in overall school climate in PARC and

Comparison schools. A school score was computed by averaging the teacher scores from each school. School scores were then compared. Results are shown in table 6.9.

Table 6.9

Independent T-test results- School Climate Rating

Group	Mean	SD	t	p
Comparison n=17	3.42	0.31	-.097	.92
PARC n=20	3.41	0.27		

T-test results indicated no differences in both overall school climate and on the teacher collaboration subscale of the climate survey when analyzed at the $p = .05$ significance level. Although a second round of surveys was not possible due to time and monetary restrictions, a larger response rate would be necessary to draw any final conclusions on the timbre of climate at PARC and Comparison schools.

It is important to note that a high percentage of Comparison school teachers (73%) indicated that they participate in study groups. This may be a sign that teachers statewide are participating in some form of PARC whether the collaboration is state-sponsored or not. This could also point to a reason for lack of differentiation in school climate ratings in the sample groups in this study, that is, informal PARC participation may have the same effects on school climate as state-sponsored PARC programs.

Teacher Profiles

Using the Content Analysis approach described by Patton (2002) Interview data were coded and scrutinized to reveal patterns leading to the identification of PARC teacher participation profiles. Three profiles emerged from the interviews and were quantitatively compared to examine differences in classroom behavior as determined by classroom observations conducted in the quantitative phase of this study. The profiles and the results of the comparisons are discussed below.

Profile 1: Unsupportive or Non-Participant

The Unsupportive or Non-Participant is usually a seasoned teacher who has experienced many school reform efforts throughout her career. He or she may choose to not attend PARC meetings or may attend without being an active participant. This teacher feels as though professional development is unnecessary at this stage in her career in light of her overwhelming classroom experience. A favorite expression of this teacher's is, "I wish they would just leave me alone and let me teach!" This teacher may sabotage meetings or projects by lack of participation or through adverse actions with no concern for other participants.

Profile 2: Supportive Participant

The supportive participant is usually a teacher with substantial classroom experience (8 or more years). This teacher believes in the power of professional development for new teachers, but takes all personal suggestions "with a grain of salt." They feel that attendance at PARC meetings is helpful but do not hesitate to pick and choose what strategies they will adopt in their own classrooms. They feel their role in the PARC group is mostly to support the development of the less experienced teachers in the group.

Profile 3: Active Participant

The active participants are usually new (1-3 years) or uncertified teachers, but can also be highly motivated more experienced teachers. These teachers are eager to learn new techniques and implement them in their lessons. They are also more comfortable with observing other teachers and being observed themselves. This may be a product of the Louisiana Teacher Accountability Program, which mandates periodic observations of teachers during their first four semesters in the classroom.

Active participants are also more likely to accept suggestions from other teachers and administrators and feel less threatened by such criticism.

Teacher Profile Comparisons

One of the goals of this research project was to compare the observed classroom effectiveness of teachers with different participation profiles. Due to the lack of difference in teacher effectiveness between PARC and comparison teachers observed, and due to the small sample size (n=22) of PARC teachers with available profiles and observations, the results presented below represent a descriptive analysis of the profile comparisons only. Future studies may uncover relationships with more representative or predictive power.

Figure 6.1 shows the mean teacher effectiveness scores for PARC teachers in all profiles.

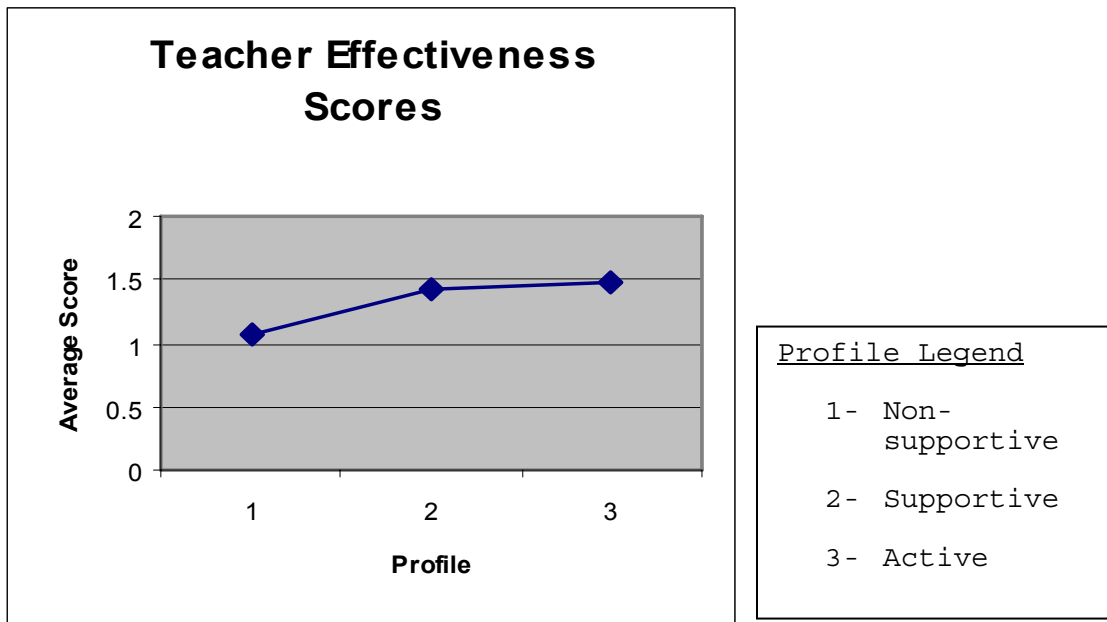


Figure 6.1. Means Plot of Overall Teacher Effectiveness Scores for All Profiles

The plot suggests teachers in the Supportive and Active Participant roles show more effective classroom teaching behavior as measured by the LCET than Non-supportive teachers.

Data were also explored for the two domains of effectiveness measured by the LCET observation instrument, Instruction and Classroom Management. Results are presented in figures 6.2 and 6.3.

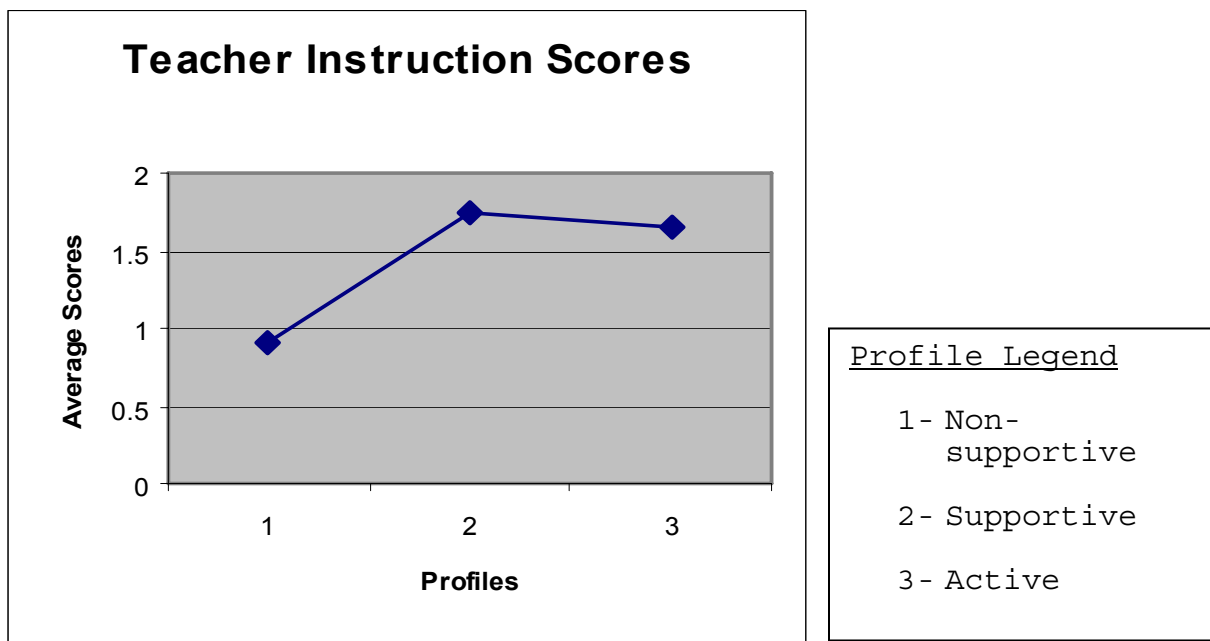


Figure 6.2. Means Plot of Teacher Effectiveness Instruction Domain Scores for All Profiles

The means plot in figure 6.2 shows the average Instruction Domain scores for teachers in the three

participation profiles. Once again, the plot indicates teachers in the Active and Supportive roles may exhibit greater instructional effectiveness than their Non-supportive counterparts. A slightly higher average for supportive teachers may reflect additional classroom experience they are likely to have over less-seasoned active participants.

Figure 6.3 shows the average Classroom Management Domain scores for all three teacher profiles. As with the two previous plots, Management scores average higher for supportive and active teachers than for non-supportive teachers.

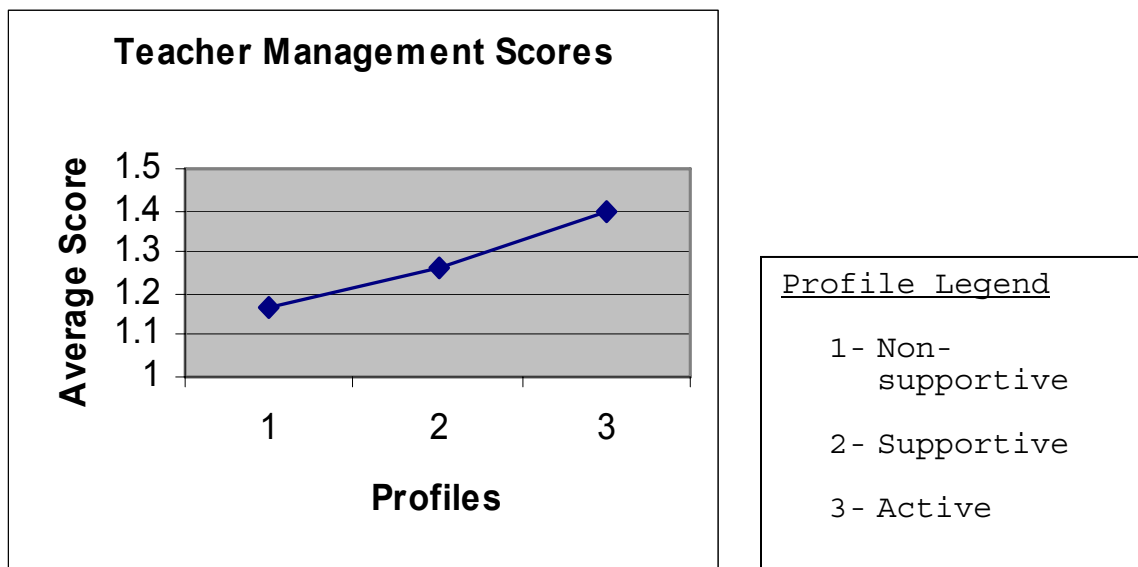


Figure 6.3. Means Plot of Teacher Effectiveness Management Domain Scores for All Profiles

It is important to reiterate that further studies will have to be done to draw formal conclusions about any

differences in teacher effectiveness based on participation profile. However, the data reflected in this section indicate that such studies would be useful in determining the role of participation level in PARC program outcomes.

Chapter Summary

This chapter presented the results associated with the quantitative data analyses in this study. This chapter began with a description of the samples with which the quantitative data are associated. The second section summarized differences in school performance scores between PARC and comparison schools. PARC Schools were found to have significantly higher growth scores than comparison schools after one year of instruction. The third and fourth sections addressed the lack differences in teacher effectiveness between PARC and comparison schools and described the similarity of school climate and teacher collaboration in the selected schools. Results seem to indicate that something beyond School Climate and Teacher Collaboration leads to higher gains in PARC School Performance.

Chapter 7
Conclusions, Limitations, and Suggestions for Future
Studies

This study investigated the effects of Professional Action Research Collaboratives (PARCS) on teacher effectiveness and school climate outcomes. Although previous studies indicated that PARCS have a positive effect on school culture, this study extends those results by:

- investigating teachers' attitudes toward their profession also, and
- comparing teacher behaviors and school culture in PARCS as opposed to control schools.

A major focus of this study was the exploration and scrutiny of a newly-introduced method for collecting and analyzing qualitative data, Interactive Qualitative Analysis (IQA).

Conclusions

This study utilized IQA and non-parametric statistics to explore several research questions and hypotheses. Each question and hypothesis is discussed below.

Research Question 1: How does school climate affect teacher effectiveness in PARC schools?

This question was addressed through the IQA process which was outlined in previous chapters and is discussed later in this chapter. Findings for each affinity (e.g., Time Issues) are discussed here followed by a summary of the Systems Influence Diagram (SID) that resulted from the analysis.

Principal. The principals' leadership characteristics (including listening skills and problem-solving style) were found to be the most important factor in the IQA School Climate model. The principal was found to have influence over every affinity in the model from Time Issues to Teacher Trust.

Time Issues. Time was a greater issue for teachers in Learning Intensive Networking for Success (LINCS) schools than for teachers in Teacher Advancement Program (TAP) schools.¹⁰ Teachers in LINCS schools felt their study group and planning time was less protected than their TAP counterparts' cluster meeting time. They felt they were more susceptible to having their study group time taken away or used for non-PARC purposes such as assemblies or School Building Level concerns. The level to which teachers' study group or cluster meeting time was protected

¹⁰As noted throughout this document, LINCS and TAP schools are two different types of PARCS.

varied and depended greatly on the administration at the school.

Responsibility. Participants described added responsibilities as an expected component of teaching and school culture. Although these responsibilities added to time and stress issues, teachers felt some administrators did a better job of delegating tasks fairly. Therefore, the principal was more likely to be blamed for climate issues than for time issues or responsibilities, since the latter issues were an expected component of the culture.

Stress. Participants in this study reported experiencing "good" and "bad" stress. "Good" stress served as a motivating factor, urging teachers to hone their craft to meet accountability goals. "Bad" stress was closely related to time issues when teachers felt demands placed on them that they didn't have the capacity to meet.

Teacher Retention. The ability to keep a stable faculty from year to year was a luxury experienced by the more effective schools. Teachers in these schools were more motivated to return each year and work with the faculty to which they were professionally and emotionally bonded. Teachers at less effective schools were more likely to apply for a transfer since they didn't feel like a valued part of a school community. Principal, Time

Issues, Responsibility, and Stress were all factors influencing teachers' decisions to stay or transfer out of a particular school.

Academics. Schools were also divided along effectiveness lines in terms of the academic expectations they reported for their students. Teachers at less effective schools discussed the difficulty of raising expectations in the face of failure while teachers at more effective schools saw their high expectations reflected in the attitudes of parents and students.

Teacher Trust. Teachers interviewed indicated that increased teacher trust has a positive effect on their classroom teaching by opening lines of dialogue between them and other teachers and by making resources more readily available.

Overall, this study uncovered seven factors, or affinities, that make up school climate. These factors can be divided into drivers and outcomes with the Principal as the primary driver in the system and Teacher Retention, Academics, and Teacher Trust the primary outcomes. The Drivers in the system, Principal, Time Issues, and Responsibilities have influence over the other affinities and, in turn, have the greatest influence over teacher effectiveness in the schools studied.

Research Question 1 Sub-Question: Does school climate affect teacher performance similarly in LINCS, TAP, and Comparison Schools?

Observations and interviews indicated school climate factors have similar consequences with regards to teacher effectiveness across LINCS, TAP, and Comparison Schools. Teachers in LINCS and TAP schools gave anecdotal evidence that the added Trust gained through PARC meetings made them better teachers, but there was no observable evidence that these factors affected PARC teachers differently than Comparison teachers.

Teachers in the TAP School reported additional benefits from the Responsibilities and Academic Expectations the program brought, but this benefit was not evidenced in the observations.

Research Question 2: Do the interview data substantiate the hypothesized relationship system created by the IQA focus group exercise? And sub-questions:

- How are the interview results supportive or contradictory to the focus group results?
- What are the advantages and disadvantages of using IQA in a Mixed Method study?

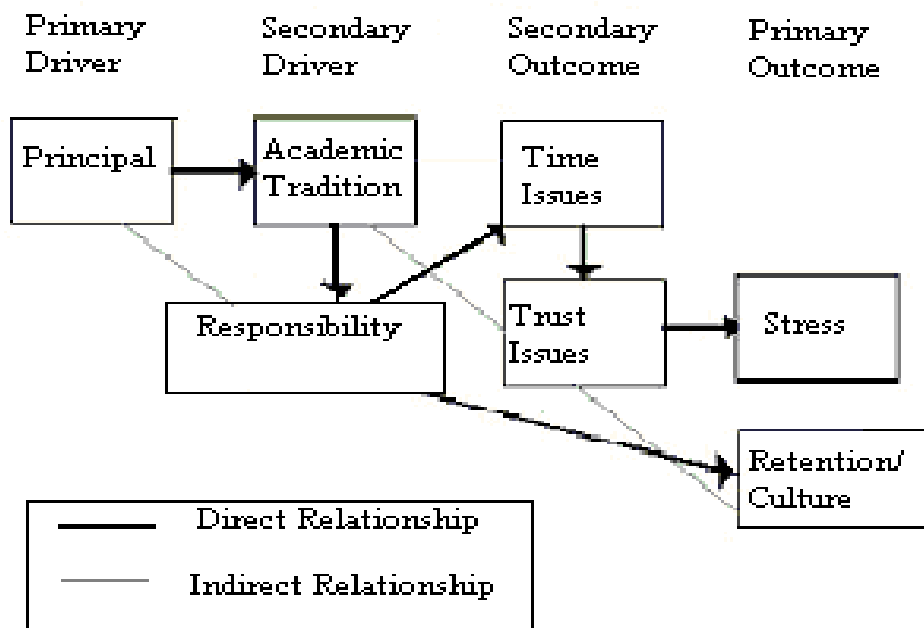


Figure 7.1. Focus Group SID

Two Systems Influence Diagrams (SIDs) were created as a result of the IQA analysis. The first SID was the end product of the IQA focus group process which was explained in Chapter 4. The second, or final, SID was the outcome of the individual interview phase of the IQA process described in Chapter 5.

When the two SIDs are compared, significant differences are apparent. The most significant difference is the placement of Academics on the two SIDs. Focus group participants felt the Academic tradition at their school was second to only the Principal as the driving force behind their school culture. Interview participants at other schools, however, felt the Academic tradition was a

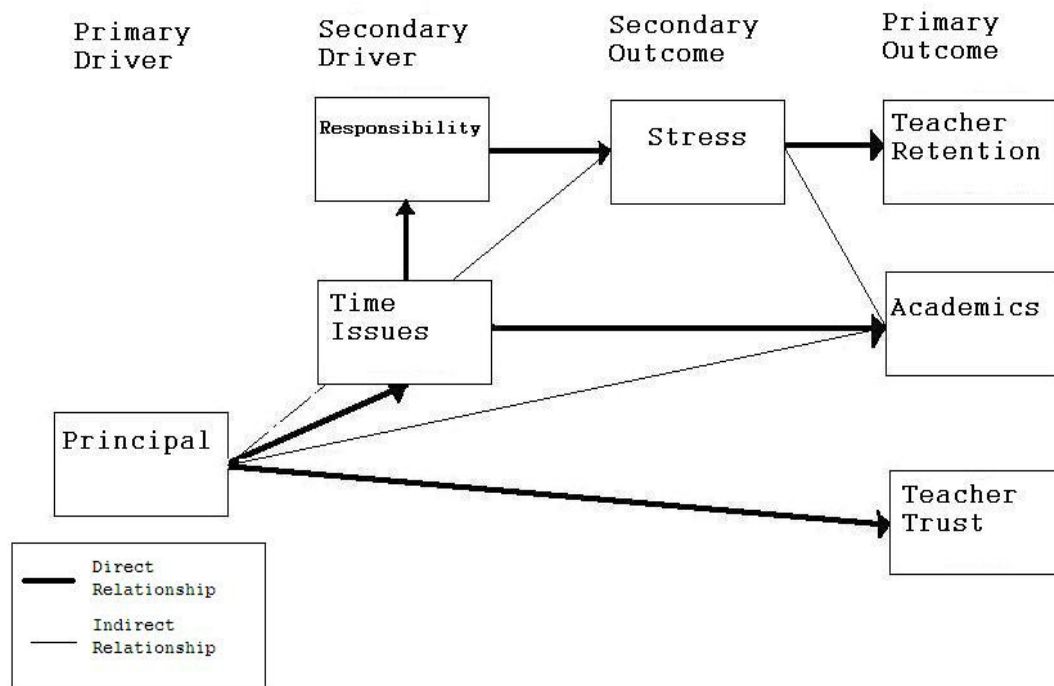


Figure 7.2. Final SID

primary outcome, or result, of their particular school climate. The interview participants placed Time Issues in a more active role in the model, whereas focus group participants felt Time Issues were an effect of other factors.

In both models the Principal was the primary driving factor in school climate and Teacher Retention was one of the primary outcomes. If we are to read this model as a relationship system, this indicates that Teacher Retention at a particular school is a function of the characteristics of the Principal at that school.

Differences in the SIDs are to be expected since the purpose of the focus group SID is to provide a model with which interview data are compared. How much difference to be expected, however, is an empirical question to be answered by future research conducted using the IQA process. In this study the differences between the focus group and interview SIDs may be an indicator that the focus group teachers were not a representative subset of all PARC teachers. The possible limitations of a non-representative focus group are explored later in this chapter.

Hypothesis 1: Schools participating in PARCS will demonstrate greater effectiveness than comparison schools

This hypothesis was tested by comparing state accountability scores for PARC and Comparison Schools. While the Louisiana Dept of Education assigns several performance scores for each school each year, Growth Scores were chosen for this analysis since they are the most statistically comparable scores assigned. A Growth Score is an indicator of how much a school's performance score improved or declined from the previous year.

To compare Growth Scores, both parametric t-tests and a non-parametric Mann-Whitney test were run. Results of these tests showed significantly higher Growth Scores for PARC Schools than Comparison Schools. Growth Scores for

PARC Schools averaged 3 points higher than Comparison Growth Scores. Participation in PARCs seems to offer a small but significant edge to schools vying for higher performance scores.

Hypothesis 2: Teachers in schools participating in PARCS will demonstrate higher levels of teacher effectiveness than teachers in comparison schools

The second hypothesis was tested by comparing observations of 22 PARC teachers and 14 Comparison teachers. Observations were conducted using two sections of the Louisiana Components of Effective Teaching (LCET) Observation Protocol. The Instructional and Management domains of the LCET were used to compute a Teacher Effectiveness Score for each teacher observed. In addition, scores were computed for each teacher for Instructional Effectiveness and Management Effectiveness using each domain subset.

Independent Sample t-test results showed no significant difference in Overall Teacher Effectiveness between PARC and Comparison Schools. When analyzed at the domain level, the data again showed no significant difference in either Instructional Effectiveness or Management Effectiveness.

Hypothesis 3: School Climate in PARC schools will be more positive than school climate in comparison schools.

To test differences in PARC and Comparison climate, a school climate survey was sent to three teachers at each school in the larger sample of 165 schools. Survey questions were taken from a 10th grade teacher questionnaire used in the 1990 follow-up of the National Educational Longitudinal Study (NELS) which was issued by the National Center for Educational Statistics (Taylor and Tashakkori, 1995). Independent T-tests were used to search for differences in overall school climate in PARC and Comparison schools.

T-test results indicated no differences in both overall school climate and on the teacher collaboration subscale of the climate survey. Since a second round of surveys was not possible due to time and monetary restrictions, caution should be exercised in interpreting these results due to the low survey response rate. A larger sample would be necessary to draw any final conclusions on the differences in climate at PARC and Comparison schools.

The overall proliferation of PARCS throughout the state may be a cause of the lack of differences in teacher effectiveness and school climate results discussed. This

diffusion of innovation could have masked any individual effects of the programs studied. The lack of differences could have also resulted from differences in the implementation level of the PARC programs at the schools sampled. At this time, there is no method for measuring the level of implementation for the programs studied. Another possible explanation is the tendency of participants to react to surveys and observations in an overly positive manor (Hawthorne Effect, see Patton, 2002) skewing the results in that direction.

Mixed Method Profile Comparisons

An auxiliary set of analyses that emerged during the course of the study was to compare the observed classroom effectiveness of teachers with different participation profiles. There were no a priori questions or hypotheses regarding this analysis. Using Content Analysis, interview data were coded and scrutinized to reveal patterns leading to the identification of PARC teacher participation profiles. Three profiles (Active, Supportive, and Unsupportive or Non-Participant) emerged from the interviews and were quantitatively compared to examine differences in classroom behavior as determined by classroom observations conducted in the quantitative phase of this study.

Means plots suggest teachers in the Supportive and Active Participant roles show more effective classroom teaching behavior as measured by the LCET than Non-supportive teachers. Analysis also indicates teachers in the Active and Supportive roles may exhibit greater instructional and management effectiveness than their Non-supportive counterparts.

Erzberger and Kelle (2003) describe a *complementary model* of mixed methods research in which the findings from quantitative and qualitative phases are neither convergent nor divergent, but instead work together to provide a fuller picture of the phenomenon being studied. This study takes a *convergent* approach as the teacher profiles created from the IQA interviews help to interpret the effects of PARC participation on teacher effectiveness. Findings from IQA interviews and teacher observations neither “converge” nor “diverge” in this study, but the resulting profile analysis begins to give a fuller, more complete picture of the PARC phenomenon and its effect on teacher classroom behavior.

IQA

One goal of this study was to attempt to validate a new method of conducting qualitative research, Interactive

Qualitative Analysis. Figure 7.3 outlines the IQA research process used in this study.

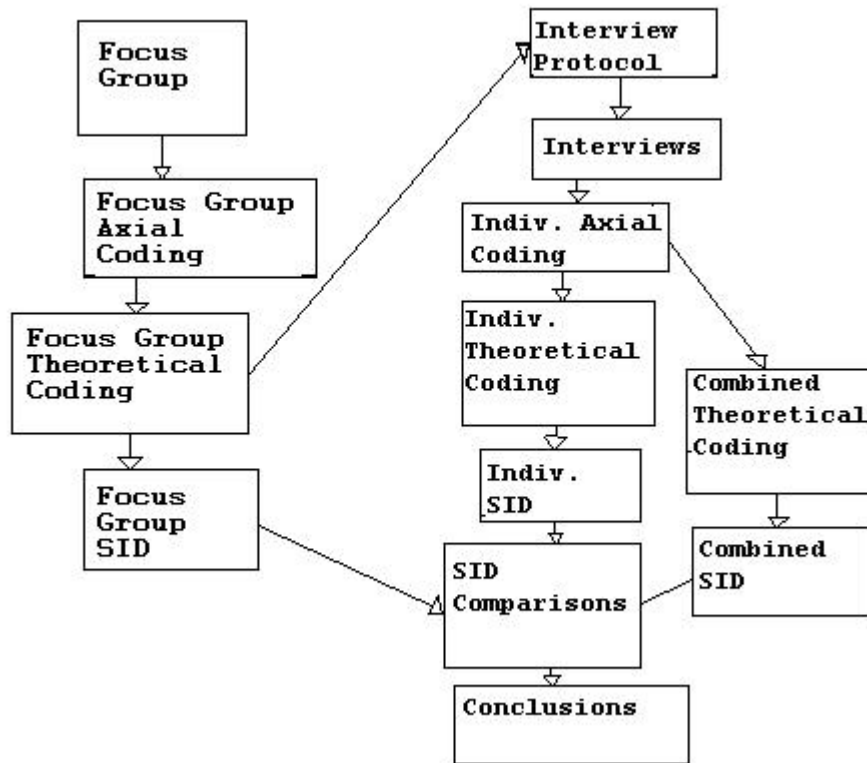


Figure 7.3. IQA Research Process

As described in chapter 4, the IQA focus group was used for two purposes:

- as a means of uncovering factors associated with the PARC groups and
- as a means by which to test the quality of inferences drawn from the IQA process.

Interview data were explored through axial and theoretical coding to create themes. Both individual interviews and the group of interviews were coded

theoretically. The resulting theoretical codes were transformed into System Influence Diagrams (SID) for individuals and the group. To test the strength of IQA as a research method, I compared the affinity relationships established in the focus group with both interview data and with findings from the literature, a process that helped to explain the PARC phenomena and make predictions about school and teacher attitudes and performance within the program.

Comments Regarding the IQA Process

This study also serves to document the process of using IQA in a mixed methods study. This section will discuss several issues that arose at some stage in the study. While every research method has benefits and drawbacks that make it suited for certain studies, this study sought to illuminate those characteristics of IQA that researchers should examine when considering the employment of the technique in a study. There are, to this date, no published studies utilizing the IQA method.

Benefits of IQA

Although IQA is ultimately a detailed and time-consuming undertaking, the process is aided by tools made available to the researchers by the IQA creators (Northcutt & McCoy, 2004). For example, data collection and analysis

are facilitated through templates, tables, and an instructional CD. In addition, participant analysis in the focus group(s) helps to take some of the data analysis away from the researcher and creates the interview protocol in the process.

Another benefit to IQA is the highly organized nature of the method. The organization keeps the process from becoming overwhelming even for researchers new to it. Each phase of the IQA process leads the researcher naturally into the next phase of analysis and the process can be consistent over several research projects.

Perhaps the largest benefit is the confidence researchers can have in IQA results. According to Northcutt and McCoy (2004), IQA contains academic rigor in that it: 1. requires public and non-idiosyncratic data collection and analysis, 2. requires data collection and analysis to be replicable, and 3. requires that data collection and analysis not depend on the researcher or elements being investigated.

The characteristics described here make IQA an attractive choice for new researchers in need of a more guided (step-by-step) method of analysis, or researchers with quantitative leanings who may face a qualitative research question.

Limitations to the IQA Method

Several limitations to IQA were uncovered during the extent of this study. Most of these limitations come up during the reporting phase, and are to be expected with the introduction of new methods and an accompanying vocabulary.

New methodologies bring with them a new vocabulary of jargon. For the IQA researcher, this means extra time must be taken to translate their plans into language that colleagues and participants will understand. Each procedure must be explained in detail to other researchers and most importantly, to participants, who are an integral part of the analysis. If the participants are to have an active role in the study, they must feel comfortable with the methods they are asked to use.

One of the most important and confusing methods participants must use is the Affinity Relationship Table (ART, see Chapters 4 & 5, this text). This part of the IQA process asks participants to indicate causal or influential direction for all possible affinity relationships. A problem arose when participants felt there were dual-relationships, or relationships where influence could be reciprocal. For example A could influence B or B could influence A. Participants in an IQA study will need comprehensive directions to complete an ART and the

researcher will have to plan ahead to be able to confront dual-relationship situations.

The IQA process involves a significant amount of data, analysis results, and research implications. The resulting research report, which should elucidate all the nuances of the IQA process, can be an intimidating undertaking. IQA used in a mixed methods study practically doubles the effort. Until IQA becomes a common enough research practice that the entire process doesn't have to be detailed in the final report, researchers should consider the magnitude of the undertaking before adding IQA to a mixed methods study.

Criticism of IQA

While the value of IQA as a research method should not be underestimated, there are certain issues that researchers should be prepared to address and resolve in the planning stage of any IQA study. None of the following points should warrant the exclusion of IQA as a possible methodological option. Researchers, however, are cautioned to consider each point with consideration to individual research situations.

Reaching Focus Group "Saturation"

Northcutt and McCoy (2004) suggest one focus group per shareholder group. Other researchers (Krueger and Casey,

2000) insist multiple focus groups are necessary to improve the chances of collecting all possible pertinent information. Kruger & Casey and others (Creswell, 1998; Patton, 2002) indicate focus groups should be repeated until the information supplied by each group reflects or reiterates information already collected. When no new information is gained during focus group meetings, the data is said to have reached saturation (Patton, 2002).

Although Northcutt and McCoy (2004) intend the initial focus group to be used similarly to a pilot study for the purpose of initiating the affinities to be tested in the individual interview phase, the use of a single focus group does not afford researchers the chance to reach data saturation. If saturation is not attained, then the list of affinities used as a basis for the study may be sorely lacking.

Multiple focus groups per stakeholder group should be conducted to maximize the representative-ness of the affinities created. The researcher would then have the responsibility of merging the affinities into a comprehensive set. This set of affinities could be member-checked with stakeholders to further validate the findings.

When a Single Focus Group Is Utilized

Of course, there will undoubtedly be cases where it is not possible to conduct multiple focus groups. The researcher in this situation can try to resolve the lack of saturation in the focus group data by asking individuals to corroborate or contradict the affinity list during the individual interview phase. The one focus group approach used in this study leads to two possible problems.

The first problem was played out within the events of this study. Individuals were asked if the list of affinities was complete during their interviews. Of the 24 interviews, no participants suggested changes to the list. There are several explanations for the lack of response:

- The affinity list may have been complete as created by the focus group and encompassed every aspect of school climate so that no individual participant could suggest any additions or deletions.
- Or, more likely...
 - The individuals were not comfortable suggesting changes to the list because they were unclear regarding the concept of school climate,

- o They were unfamiliar with the use of variables or affinities to define a phenomenon,
- o Or they did not feel they had the authority to question the model I presented them.

A second and more difficult problem to address would have been if individual participants did make changes to the affinity list. There is, of yet, no standard method to deal with changes in the list of affinities mid-study. The basis of the IQA approach is that the interviews substantiate or solidify the relationships of the affinities generated by the focus group. But questions would arise if individual interview participants question the affinities themselves. The question of how to deal with a weak affinity structure leading from unsaturated focus group data will have to be addressed in studies to come.

The IQA process is built around a comprehensive system for collecting, organizing, and analyzing a large amount of qualitative data. The system was made to accommodate a focus group and a minimum of 25 interviews. Unfortunately, this makes IQA unreasonable for a large number of studies using qualitative methods. Many qualitative studies focus on extraordinary populations and are unable to accommodate

a large sample. Projects intended to investigate small groups such as outliers or extreme cases will inherently be incompatible with IQA because of the inability to draw a large enough sample from the population.

At the other end of this criticism, researchers leaning toward quantitative methods might not be tempted to try qualitative methods. With a sample large enough for statistical testing quantitatively-minded researchers will not venture to try IQA, even if a qualitative study might be appropriate. Unfortunately, this may leave IQA searching for an audience. Without persuasive research to defend the methodology researchers comfortable in their current methods, may be hesitant to try IQA.

Future Directions for Research

The proliferation of PARCs throughout state of Louisiana became apparent with the dissemination of the school climate survey. Future researchers will want to study the types and effects of different PARCs in the state including teacher-sponsored, school-sponsored, and state-sponsored PARCs.

Another implication for future research is the examination of the connections between IQA and Structural Equations Modeling. There is a visible likeness of the IQA Systems Influence Diagram and a Structural Equations Model.

Both methods seek relationships among latent variables and a visual representation of the mechanisms of those relationship systems. Future studies should examine the similarities of the two processes, and perhaps use IQA to develop models which can be triangulated by SEM.

This dissertation has made contributions to the field of Educational Research in several ways. First, the study examined the Professional Action Research Collaborative, a professional development phenomenon gaining popularity among teachers and school administrators. The study also served as a test of Interactive Qualitative Analysis and offered not only an explanation of the method, but also a critique of its usefulness as a means of gathering and analyzing data. Finally, this project successfully combined quantitative and qualitative methods to examine the PARC effects on teacher effectiveness in a mixed methods study.

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Appendix 1
Interview Protocol

The PARC Focus Group identified several themes or affinities that described the climate or culture of their school. Let's look at each of these themes one at a time while you tell me about your experiences with each.

1. PRINCIPAL. The focus group described this affinity as leadership characteristics of the principal. Tell me about your experiences with your current principal.
2. TIME ISSUES. This affinity describes time-related issues created by added responsibilities from PARCs and accountability requirements. Tell me about Time Issues.
3. STRESS. The focus group described stress caused by various factors as a part of school climate. Tell me about your experiences with stress.
4. RETENTION. Teachers in the focus group described teacher retention as a component of the climate in their school. Tell me about teacher retention in your school.
5. RESPONSIBILITY. The focus group participants described added responsibilities due to participation in PARCs. Tell me about responsibility.

6. TRUST. Focus group teachers told me about their feelings of trust toward other teachers. Tell me about trust in your school.
7. ACADEMICS. Focus group participants described the academic tradition of their school. This includes the expectations of students, teachers, and parents. Tell me about academics at your school.

Appendix 2
School Climate Survey

I Teach in a LINCS or TAP School: Yes No Grade Taught: 3 5 7

Teachers at my school participate in study groups or cluster meetings?

Yes No

On the scale below, indicate the extent to which you agree or disagree with each of the following statements.	Strongly Agree	3	2	1	Strongly Disagree
The principal at my school makes plans and carries them out.	4	3	2	1	
The principal at my school lets staff know what is expected of them.	4	3	2	1	
The principal at my school is interested in innovation.	4	3	2	1	
The administration at my school knows problems faced by the staff.	4	3	2	1	
The principal at my school consults the staff before making decisions.	4	3	2	1	
The principal at my school deals effectively with outside pressures.	4	3	2	1	
The principal at my school is good at getting resources.	4	3	2	1	
Goals and priorities for my school are clear.	4	3	2	1	
Staff members at my school are recognized for a job well done.	4	3	2	1	
Rules for student behavior are enforced at my school.	4	3	2	1	
The teachers' union and administration work together at my school.	4	3	2	1	
Class cutting is a problem at this school.	4	3	2	1	

Tardiness to class is a problem at this school.	4	3	2	1
Absenteeism is a problem at this school.	4	3	2	1
Tardiness and class cutting interfere with teaching at this school.	4	3	2	1
Physical conflict is a problem at this school.	4	3	2	1
Verbal abuse of teachers is a problem at this school.	4	3	2	1
A great deal of cooperative effort exists among staff.	4	3	2	1
Teachers can count on staff members to help out.	4	3	2	1
Colleagues share beliefs about the school's mission.	4	3	2	1
Teachers at my school are continually learning.	4	3	2	1
Broad agreement exists among faculty about the school's mission.	4	3	2	1
Department or grade-level chair's behavior is supportive.	4	3	2	1
Students are incapable of learning material.	4	3	2	1
Students have attitudes that reduce academic success.	4	3	2	1
Drug/alcohol abuse interferes with teaching.	4	3	2	1
Student misbehavior interferes with teaching.	4	3	2	1
Routine duties interfere with teaching.	4	3	2	1
I coordinate my courses with department/grade level teachers.	4	3	2	1

I coordinate content with teachers outside my department/ grade level.	4	3	2	1
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I am familiar with content taught by department/ grade level teachers.	4	3	2	1
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Appendix 3
Pilot Study Protocol

Pre-study (Create system elements)

1. Draft Research questions and produce Issue Statements
2. Identify Focus Group

Study (define system relationships)

1. Facilitate Silent Nominal Process
2. Tape cards to wall, facilitate clarification of meaning
3. Ask group to silently cluster cards by theme
 - a. Facilitate affinity analysis
 - b. Facilitate inductive, axial, and theoretical coding
 - c. Facilitate procedures for gaining consensus as needed
 - d. Document affinities and sub-affinities
4. Group Affinity Relationship Table (ART) construction
 - a. Is there a relationship between affinities?
 - b. What is the direction of the relationship?
 - i. $A > B$ (A influences B)
 - ii. $A < B$ (B influences A)
 - iii. $A < > B$ (There is no relationship)
 - c. Create hypothesis explaining relationship
 - d. Continue for all possible pairs

Post-Study (hypothesis formation)

1. Create Interrelationship Diagram (IRD)
2. Determine Drivers and Outcomes
3. Create System Influence Diagram (SID)

Appendix 4
Pilot Study Affinity Relationship Table

Relationship	Affinity Relationship Statements
1>2	Principal influences Time Issues
1>3	Principal influences Stress
1>4	Principal influences Retention
1>5	Principal influences Responsibility
1>6	Principal influences Trust Issues
1>7	Principal influences Academic Tradition
2>3	Time Influences Stress
2<>4	No Relationship between Time and Retention
2<5	Time is influenced by Responsibility
2>6	Time influences Trust Issues. "No time to know people and socialize"
2<7	Time is influenced by Academic Tradition
3<>4	No relationship between Stress and Retention. "Other places are worse"
3<5	Stress is influenced by Responsibilities. "If you are under stress, how can you fulfill expectations?"
3<6	Stress is influenced by Trust Issues
3<7	Stress is influenced by Academic Tradition. "You know you don't have time"
4<5	Retention is influenced by Responsibility. "You have to be responsible to stay here"
4<>6	No relationship between Retention and Trust
4<7	Retention is influenced by Academic Tradition
5<>6	No relationship between Responsibility and Trust
5<7	Responsibility is influenced by Academic Tradition
6<>7	No relationship between Trust and Academic Tradition

Note. Clarifying Comments are included only for affinities where participants felt extra information was necessary.

Appendix 5
Sample Blank Affinity Relationship Table

<u><i>Affinity One</i></u>	<u><i>Relationship</i></u>	<u><i>Affinity Two</i></u>
Principal		Time
Principal		Stress
Principal		Teacher Retention
Principal		Responsibilities
Principal		Trust
Principal		Academics
Time		Stress
Time		Teacher Retention
Time		Responsibilities
Time		Trust
Time		Academics
Stress		Teacher Retention
Stress		Responsibilities
Stress		Trust
Stress		Academics
Teacher Retention		Responsibilities
Teacher Retention		Trust
Teacher Retention		Academics
Responsibilities		Trust
Responsibilities		Academics
Trust		Academics

Vita

Shannon Lasserre-Cortez is a graduate of Saint James High School. She received a Bachelor of Arts degree in Elementary Education from Nicholls State University in 1998 and a Master of Arts degree in Educational Research Methods from Louisiana State University in 2002. Shannon taught in the elementary and middle school classroom from 1998 to 2001 and is currently employed at the Louisiana Department of Education. She is married and has three children.