A Collective Inquiry Response to High-Stakes Accountability

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ABSTRACT

This study examined the practices of schools that demonstrated remarkable growth in student achievement in response to high-stakes performance accountability, despite a legacy of low performance and challenges of high-poverty, high-minority, and high English learner populations. Three schools were selected based on demographic criteria, growth in academic achievement, and stability in leadership. Interviews, observations, and document reviews were conducted in a descriptive, holistic, multiple-case study research design. Data were analyzed quantitatively and qualitatively. Findings confirmed the importance of Shared Purpose/Focus on Results, Data Use, Collaboration, Professional Development, and Leadership, as emphasized in the literature on school improvement, and identified three additional practices—District Direction/Support, Parent Involvement, and Expectations/Success Culture. Subpractices further defined focus and scope. Collective inquiry operationalized and integrated the practices in a spiral of continuous improvement. Six characteristics of collective inquiry were identified, with elements of practice, sample protocols and tools. The role of leadership was redefined as sustaining and supporting collective inquiry teams with commitment to the reform vision. Implications for school reform included a conception of internal accountability as a network of aligned and interdependent collective inquiry teams serving school performance goals. Two factors determined success: (1) degree of alignment of collective inquiry networks with external accountability systems— federal, state and district, and (2) inclusion of all school community members. The latter engendered a broader base of shared vision, commitment and shared leadership, resulting in continuous improvement of inputs, processes, and outcomes.

INTRODUCTION

The policy environment in education has changed from compliance accountability to performance accountability. This study examined and explored successful cases in which the internal response of local education systems to the changes in external accountability led to high levels of growth in student achievement.

This paper summarizes the methods utilized in the study as well as the main findings from the study. The paper establishes the context and background of the problem, briefly reviews the main findings from research literature associated with both external accountability and internal accountability responses, discusses the purpose and research questions that guided the study, describes the methods employed, present the main findings, and discusses conclusions from the findings along with key implications for practice and research.

Background, Purpose, and Value

This section sets forth a brief introduction to the background and purpose of the study and discusses the value of the study for school leaders and researchers.

Background

Education is undergoing a quality revolution. Input-based, compliance accountability measures have given way to output-based, performance accountability policies. Moreover, consequences are attached to failure in response to these policies. These consequences range from moderate inconveniences to high stakes that impact the professional and personal lives of education practitioners and students alike.

Reputations, job security, financial disincentives, public scrutiny, opportunities for advancement, and various levels of corrective action hinge on the quality of performance as measured by student achievement outcomes on standardized tests.

The high-stakes, performance accountability movement in education is a response to broader, external market forces that are designed to break down traditional practices and drive quality improvement (Walsh, cited in Wilkinson & Willmott, 1995). Likewise, the performance accountability forces that shape today's educational policy arena form the external market forces to which local education systems must respond internally if they are to succeed and thrive. Therefore, districts and schools are faced with an urgent need to understand the implications of external accountability for school reform and to implement processes for school reform that mobilize, manage, and sustain continuous improvement of performance outcomes.

Moreover, the accountability systems in education are in a continual state of flux, as each level of policy—state and federal—responds to its external environment. Local education agencies, therefore, need a framework for reform that can enable and sustain the ongoing alignment of their internal accountability systems with the changing mandates of the external systems that dictate their focus and goals. According to W. Edwards Deming, one of the leading contributors to the management of systems that create and sustain productive change, "You can't manage quality—quality is an output. You can only manage systems" (cited in Shwahn & Spady, 1998, p. 85).

The literature on professional learning communities offers a dynamic framework for continuous improvement of performance processes and outcomes in systems of

education. "The most promising strategy for sustained, substantial school improvement is developing the ability of school personnel to function as professional learning communities" (DuFour & Eaker, 1998, p. xi). At the heart of this framework is the process of collective inquiry, in which practitioners work collaboratively, using data-driven reflective dialogue, to make decisions that improve teaching and learning.

In education organizations that were built on a top-down linear production model, the practices and processes implied by the systemic approach of the professional learning community framework often run against the grain of entrenched routines and beliefs. As a result, school practitioners often find themselves trapped in repetitive cycles of seduction and abandonment that result from limited, quick-fix reform approaches that do not address or engage the entire system of the organization. The challenge for school leaders is to engage in a learning mode that transforms the practices, beliefs, and structures of the school and mobilizes all of its resources in processes of collective inquiry that result in a spiral of continuous improvement.

Purpose

In an era of education reform, when schools are being held accountable for high levels of growth, with social, political, and financial stakes attached to their successes and failures, and with schools, school leaders, and even students being impacted by these stakes, this study began in a relatively large school district in California. The study was motivated by a simple question: What works in school reform? Stated more specifically: What are successful school improvement practices in challenging settings such as those that face many schools in poverty-stricken neighborhoods?

These schools confront the challenges of high stakes accountability against formidable obstacles presented by poverty, obstacles that schools in more affluent neighborhoods do not have to face. Schools in areas of poverty tend to serve students with low parent education levels, fewer educational resources at home, challenges with English as a second language, lower academic prior knowledge, and, consequently, low academic performance.

These challenges, though real, are surmountable. Therefore, this study engaged the literature on school improvement that explored practices that led to high levels of growth in student achievement in traditionally low-performing schools with high-poverty and high-minority demographics. The purpose was to explore how these schools achieved growth despite their formidable obstacles and to identify the factors that led to successful school improvement.

Value

The study aspired to be of value to both practitioners and researchers in education by going beyond the mere identification of *indicators* for growth. Rather, the study aspired to examine both research and practice to determine *how* schools and districts in today's high-stakes performance accountability environment might implement internal accountability systems that respond appropriately, successfully, and sustainably to the external accountability mandates in education reform.

The study explored and documented the literature on school improvement to identify practices, protocols and tools that have demonstrated success in impacting high levels of growth in school performance. Additionally, the study was motivated by the

challenge of identifying practices that sustain continuous improvement and that succeed despite the formidable obstacles that face many schools in the nation today—years of low performance, high-poverty and high-minority demographics, and high populations of English language learners. The goal was to be of value and use to the research and practice of continuous school improvement by examining and describing in detail the successful reform practices of schools that demonstrated the capacity to sustain growth in student achievement over time and in the face of low performance and demographic challenges.

SUMMARY AND IMPLICATIONS

The remainder of this paper presents the most salient aspects of the study in summary and discusses implications of the findings for practice as well as for future research.

A Summary of the Study

This section summarizes the most significant elements of the study. It begins with the salient points from the review of literature and proceeds to set forth the research questions that resulted from this review and subsequently shaped the study. The methods used to answer the research questions are also delineated in this section, followed by the key findings that resulted and implications for practice and future research.

The Review of Literature

The review of literature began with a brief look at the standards movement as the preamble to a more thorough exploration of the accountability movement that ensued. The discussion distinguished between compliance accountability policies of the past and the performance accountability requirements of newer policies. It defined terms such as *compliance-based* or *input-driven accountability*, *performance-based* or *results-driven accountability, external accountability* and *internal accountability*. It explored the stakes associated with high-stakes accountability policies, reviewed the most important of these policies in the landscape of California's educational accountability system, discussed some of the assumptions behind such policies, and provided arguments for and against the policies as set forth in the literature.

This discussion of high stakes accountability policies, presented as the external system within which schools must survive and urgently learn to thrive, provided a framework for presentation of the literature addressing internal accountability systems. Internal accountability systems were presented as a school's internal response to the external requirements of high-stakes, performance-based accountability policies. The concept of *dissipative structures* from systems theory (Wheatley, 1994) provided an analogy for how accountability policies may be used to leverage urgency and mobilize change within a school or school district. The question remained: How might school leaders implement an internal accountability system that leads to sustained growth in student achievement?

The literature indicated that the internal system must foremost be aligned with the requirements of the external accountability system. However, as these policies are often changing continually, how would this be possible? This critical question led to further research into a theoretical and practical framework for school improvement that would enable and support the creation of an internal accountability system that sustains continuous growth in the quality of performance with the flexibility and fluidity to respond to the ever-changing external accountability environment. The search led to the professional learning community as a theoretical and practical framework for continuous improvement of quality in schools in an environment of performance accountability.

Thus, the characteristics of professional learning communities were explored and presented as successful practices in sustaining school improvement in a high-stakes environment. Care was taken to focus the research on studies that explored practices in low-performing, high-poverty, and high-minority schools that had demonstrated high levels of growth in student achievement. The practices that emerged from the literature review were categorized as follows:

- ❑ Shared Purpose / Focus on Results

- ❑ Data Use

- ❑ Collaborative Teams

- ❑ Professional Development

- ❑ Leadership

In a learning community framework, these practices were operationally interrelated and interdependent as elements of a cohesive system of internal accountability. For example, Shared Purpose / Focus on Results was the motivating force in all of the other practices identified above. In the research literature, it was frequently identified as part of the practice of Leadership, because it was the role of the leaders to promote the creation of shared purpose and to help maintain focus on results toward the fulfillment of that purpose.

In this study, Shared Purpose / Focus on Results was categorized as a distinct element of practice; however, it was also defined as a subcategory of Leadership. Likewise, Data Use enabled and informed all of the other practices in the professional learning community framework, giving them direction and focus. Data Use was the engine that drove the work of teachers in Collaborative Teams, that guided the focus of Professional Development, that informed the vision and direction in Leadership, and that unified practitioners around a Shared Purpose and Focus.

The practice of using data in collaborative teams to focus and improve teaching and learning was referred to as *collective inquiry*. Collective inquiry formed the thread connecting the professional learning community practices to one another in a cyclical process of action and reflection that led to continuous improvement. Collective inquiry was energized by Shared Purpose and a Focus on Results. It was driven by Data Use and implemented in Collaborative Teams, with the committed support of Leadership. It embedded Professional Development for the continuous improvement of practices and outcomes.

The findings from review of the literature led to several questions. How might these practices compare with leaders' experiences of the process of growth in schools with similar circumstances? What might leaders describe as the most important practices contributing to growth in their schools? Finally, how would these interrelated and interdependent practices be operationalized in the process of collective inquiry? What would the process look like in practice? These inquiries were formalized in two research questions that guided the scope, focus, and methods of the study. The research questions were designed to transcend theory and to identify and describe in detail how successful practices can be operationalized effectively in schools.

Question 1

To what extent were the practices that leaders (principals and lead teachers) in low-performing, high-poverty, high-minority, high-growth schools perceived as instrumental in their growth consistent with the professional learning community literature?

Question 2

In what ways were the collective inquiry practices of school practitioners operationalized in collaborative teams in these high-growth schools?

Methods

This section summarizes the population description, the case selection criteria, and the research and analysis methods employed in the descriptive, holistic, multiple-case study design that comprised this study.

Population

      Among the many districts in California implementing school reform to meet the requirements of the state's accountability system, one school district was identified based on its record of growth in academic performance against the challenges of low-performance in high-poverty and high-minority schools. The demographics for the district demonstrated a growing population that consisted of over 90% minority students, nearly 70% socioeconomically disadvantaged students, and approximately 50% English Learners.

      The district was also selected for the study because it was implementing a theory of action based on professional learning community practices. The theory of action integrated three key components of education—curriculum, instruction, and assessment—in a shared, focused and articulated system of delivery aimed at improving student achievement. It had at its core the practice of collective inquiry which is central to the professional learning community framework. Collective inquiry was implemented at the district level in the data-driven work of the Instructional Services team, the Cluster Leadership team, and the Cluster Meetings that brought together geographically approximate schools for collaboration toward the continuous improvement of practices and outcomes. At the school level, the Data Action Teams and grade level or departmental collegial teams carried forward the collective inquiry practices.

Case Selection Criteria

Within the school district, a rigorous case selection process led to the identification of three schools for participation in the study. The criteria for case selection follow:

- ❑ Highest API growth in the district over 4 years (1998–2002)

- ❑ Growth of at least 100 points over the 4 years

- ❑ Low-performing school in 1998 (baseline API under 500)

- ❑ Met API schoolwide and subgroup targets at least last 2 years

- ❑ Consistency in principal leadership from 1998 to the present

- ❑ Consent of the principal to participate in the study

Research and Analysis Methods

The two questions of the study led to a two-phase process for data collection and analysis. The subsections below summarize the research and analysis methods employed in each phase to answer the research questions.

Phase 1: Research Question 1.

In the first phase, interviews were conducted with principals and lead teachers from each of the schools to address the first question of the study. The principals were interviewed individually, and the lead teachers were interviewed in three separate focus groups, each consisting of the Leadership Team at one of the participating schools. Leadership Teams were comprised of the grade level leaders, Data Action Teams members, resource teachers, and other lead teachers at the school. The interviews

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followed the same protocol and focused on the first research question of the study: What practices did school leaders identify as having led to growth at their schools?

It is important to note that, while the research-based practices identified through the literature review in this study were implemented in the district and were guided and supported by the division of Instructional Services, at the onset of this study the practices had never been identified or presented to the schools as individual components of successful school reform. Nor were the practices presented to the schools collectively as "professional learning community" practices. Rather, the practices were merely modeled and implemented along with a number of other school reform strategies implemented throughout the district.

Therefore, the open-ended questions in the interview protocol gathered the opinions and experiences of leaders without limitation or influence (see Appendix A for the list of main interview questions). These data were coded and analyzed using computer-assisted qualitative data analysis software. The coding scheme was developed through a dual approach. The first approach consisted of deductive coding based on the findings of the literature review, while the second approach identified additional practices and themes for coding inductively from the content analysis of the interview data themselves.

This dual process of coding allowed for the identification of practices and themes that had not been identified in the literature review but that emerged solely from the analysis of school interview data. In addition, the coding scheme included base coding that provided for case-based analysis of the data. Great care was taken in the

coding process to maintain consistency across all documents coded, and several iterations of the coding process were applied to all documents to ensure accuracy in coding.

The coded text units were then analyzed to determine the frequency and intensity with which concepts and practices were discussed by school leaders in the interviews. Distribution analyses were conducted to produce scales of relative importance for the report of findings.

Additional qualitative analysis of data was also conducted to provide depth of meaning, examples, and clarification to the quantitative findings. The qualitative results were analyzed by school and were reported in conjunction with quantitative findings for each school in case-based findings. Practices unique to each school were analyzed and highlighted. The case-based analysis, which combined quantitative and qualitative methods, provided a bridge to the analysis and presentation of the finer nuances of practice in the collective inquiry work of teachers in collegial meetings.

Phase 2: Research Question 2.

The second phase of the study triangulated data sources to report findings regarding the operationalization of collective inquiry practices in schools. The main data source for this phase consisted of observations. A detailed collective inquiry observation tool was developed for this phase of data collection, based on extensive research of the literature on collective inquiry (Collective Inquiry Tool available on file). This indicator-based tool provided an in depth checklist of elements of practice in collective inquiry, organized into four main strands of practice. It also allowed for

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narrative documentation of observed processes, practices, protocols, behaviors, and relationships.

Observations were conducted in seven different collegial meetings across the three high-growth elementary schools in the study. Specifically, data were collected and documented in six grade level meetings, spanning both primary and upper grades, and one Data Action Team meeting. These data were analyzed both quantitatively and qualitatively to report the frequency of each of the elements of collective inquiry observed and to capture the details of practice as observed in the field.

In addition, interview data from phase 1 of the study were analyzed with focus on the implementation of collective inquiry practices. Excerpts from relevant text were used to elaborate, clarify, and provide further details regarding the collective inquiry practices observed. Archival records from the schools and from the specific team meetings observed were also utilized in this phase of the study. Records such as agendas, protocols, and products from the meetings provided graphic representations of practices, processes, and outcomes in the collective inquiry work. The results were presented in aggregate form.

Findings

This section highlights the main findings of the study in response to each of the research questions.

Research Question 1: Relation to the Literature

The first research question explored the relationship between successful school reform practices derived from the professional learning community literature and practices that school leaders in high-growth schools identified as having been most important in their process of growth. A combination of quantitative and qualitative analysis methods were used to answer the following questions:

❑ Did the school data validate all of the practices derived from the literature?

❑ Did additional practices not identified in the literature emerge from the school data?

❑ Which practices emerged as most important according to school leaders?

❑ What was the relative importance of the practices, as perceived by leaders?

In the subsections that follow, the findings associated with each of the bulleted questions are summarized and synthesized. Thus, the core findings are presented along with conclusions from cross-examination of the findings.

Did the school leader data validate the practices from the literature?

The findings from quantitative analysis of the interview data validated all of the practices derived from the literature on successful school reform, particularly, professional learning community literature. Thus, the null hypothesis of this research was negated. Moreover, qualitative content analysis of the interview data provided greater focus and definition for the practices originally derived from the literature. As a result, some of the practices were renamed, with subtle differences that tightened and focused the understanding of each practice. Table 1 provides a comparative view of the

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five original practices derived from the literature and the corresponding five practices that emerged from analysis of school leader interview data. The changes that resulted are italicized in the right-hand column of the table for reference.

Table 1. Practices From the Literature Validated By School Data

Practices derived from the literature	Corresponding practices from the schools
Shared purpose/Focus on results	Shared purpose/Focus on *standards*
Data use	Data use
Collaborative teams	*Teacher collaboration*
Professional development	Professional development
Leadership	Leadership

Shared Purpose/Focus on Results was changed to Shared Purpose/Focus on Standards to reflect the intensity of focus on the California content standards demonstrated by the school leaders as they aligned their internal accountability systems with the state's external accountability requirement of grade level mastery of the California standards. Collaborative Teams was changed to Teacher Collaboration to signify more closely the central role of teachers in the collaborative process at the school level.

Did practices not identified in the literature emerge from the school data?

School leaders identified three additional practices as having been important in the process of school reform:

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- ❑ Parent Involvement

- ❑ Expectations/Success Culture

- ❑ District Direction/Support

Parent Involvement was expressed by leaders at the schools to have been among the practices leading to improved student achievement. While parent involvement is addressed in the literature on school improvement as an important and successful practice, typically it is not listed among the core practices of professional learning communities. In this study, Parent Involvement emerged as an important, central element of successful school reform in a learning community framework.

Moreover, Parent Involvement was redefined as an embedded practice of the process of collective inquiry, distinguishing it from traditional top-down, event-based approaches to parent involvement that had as their goal the mere transfer of information and/or skills. In this view of Parent Involvement, it was the responsibility of school leaders to help empower and engage parents as fellow learners in the process of collective inquiry. Thus, parents learned to practice collective inquiry—using data to help identify needs and improve practices at school and at home to improve student achievement. As a result, parents gained ownership and responsibility in the reform process, becoming active agents in building, strengthening, and sustaining the internal accountability systems of the school.

Expectations/Success Culture is frequently cited in the literature as a prerequisite to school improvement and is set forth as the responsibility of the school

leader to establish. This factor, therefore, was not included in the study as a main practice; it was instead incorporated as an element of Leadership. However, analysis of the interview data led to a new understanding of Expectations/Success Culture as a main practice that was essential to and permeated all of the other practices of school improvement. Expectations/Success Culture was the motivating force behind the work of collective inquiry and, as such, was the responsibility of all practitioners, not just the school leader, to implement.

District Direction/Support was the third practice that was added to the original list of successful school improvement practices. It must be noted that District Direction/Support represented the instances in which leaders made explicit attribution to district influence in the practices at their schools; it did not measure the actual influence of district direction and support in the schools. This distinction was important to implement because Question 1 measured the *perceptions* of school leaders about practices that led to growth. Thus, through careful attention in the coding process, attribution to District Direction/Support was coded, while actual direction and support from the district was noted elsewhere. The results for District Direction/Support led to one of the main findings of the study and are discussed in the subsection that follows.

Which practices emerged as most important according to school leaders?

Seven of the total eight practices identified in the study were found to be among the Most Important indicators of growth, as measured using the Scale of Relative Indicator Importance. All five of the indicators derived from the literature were among the seven Most Important practices. In addition to the five practices from the literature,

two of the new practices that emerged from the data were in the Most Important range: Parent Involvement and Expectations/Success Culture.

District Direction/Support was the only indicator not identified in the Most Important range. However, as explained above, this indicator was coded only in instances when interviewees made direct attribution to district influence in their school practices. By contrast, the references made by these leaders to practices that resulted from district influence, albeit without attribution, were far greater than that which was measured by District Direction/Support. This distinction between attribution and actual impact in District Direction/Support was a very important finding of the study, for it led to the following conclusions:

1. Direction and support from the district, particularly the Division of Instructional Services, greatly influenced the practices that led to success at the schools.

2. District initiatives had permeated the schools to the extent that schools expressed ownership of these initiatives as practices that were integrated into the very culture and identity of the schools.

3. The high-growth schools had the readiness to assimilate district direction and support because they had already begun to align their internal accountability systems with external accountability measures.

What was the relative importance of the practices as perceived by leaders?

The relative importance of the eight main practices was measured using the Scale of Relative Indicator Importance and the more specific scale, Distribution of Most Important Indicators. The results were discussed overall and by case. Additionally,

within each presentation of findings, results were analyzed and discussed by respondent groups—Lead Teachers and Principals. This subsection presents the salient findings.

Table 2 presents the findings regarding the relative importance of the main practices overall. The table synthesizes the various measures of relative importance that were used in the study to elaborate on the findings: rank order, in column 2 (C2); percentage of total interview text, in column 3 (C3); placement on the Scale of Relative Indicator Importance, in column 4 (C4), and value on the Distribution of Most Important Indicators, in column 5 (C5).

Table 2. Relative Importance of the Indicators

Main practices	Rank order (C2)	% of text (C3)	Relative importance (C4)	Distribution value (C5)
Leadership	1	32.9%	Most important	Highest
Shared purpose/Focus on standards	2	19.2%	Most important	2nd highest
Teacher collaboration	3	17.1%	Most important	2nd highest
Data use	4	9.9%	Most important	3rd highest
Parent involvement	5	8.7%	Most important	3rd highest
Expectations/Success culture	6	7.8%	Most important	4th highest
Professional development	7	6.4%	Most important	4th highest
District direction/Support	8	1.7%	Somewhat important	n/a

Note. Highlighted indicators form the central practices of collective inquiry, with Leadership and District Direction/Support providing direction and support.

Leadership claimed the highest proportion of the interview text, rendering it the only indicator to be valued in the Highest category on the Distribution of Most Important Indicators for the overall findings. Moreover, Leadership ranked first in importance for both respondent groups—Principals as well as Lead Teachers. The role of the leaders was essential in establishing a vision for school reform and in supporting all of the other main practices toward the fulfillment of that vision.

Furthermore, subcategory findings for Leadership helped to define the successful practice of leadership in the context of school reform within a professional learning community framework. Lead Teachers and Principals collectively defined successful leadership, in order of importance, as one that provides a strong Vision/Direction/Focus for school reform, demonstrates Commitment to Change in the implementation of that vision, provides knowledgeable direction as an Instructional Leader, models inquiry in Lead Learner roles, empowers others by being Supportive of Teachers, bases decisions on ongoing and focused Data Use/Monitoring, Allows Autonomy in the work of teachers, and holds central the work of the Leadership Team/Data Team.

Summary of conclusions from Question 1.

Thus, the findings from Question 1 formed an overall picture of interactive and interdependent practices that together led to improved student achievement. School and district leadership, which merged with almost blurred boundaries indicating remarkably close collaboration, together supported the implementation of the remaining practices,

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shaded in Table 2. These practices, in turn, converged in the process of collective inquiry which was the engine of change in the schools.

The schools in the study were able to assimilate the direction and support provided by the district toward meeting their goals because they had already begun to align their internal accountability systems with the external accountability requirements of the state, focusing on the California standards and accepting responsibility for student learning of the standards. They had already moved from urgency to agency in response to the accountability mandates.

The findings from Question 2 are set forth in the section below. These findings describe the process of collective inquiry as operationalized in the case study schools and provide best practices and next steps as identified through observations, interviews, and archival records.

Research Question 2: Operationalization of Collective Inquiry Practices

All of the Most Important practices from Question 1 of the study converged in the process of collective inquiry which was the engine of change in the case study schools. The most interesting findings regarding collective inquiry with relevance for both research and practice are presented below.

Distinguishing features of collective inquiry.

One of the findings from the interview data was the great importance of Teacher Collaboration. This practice comprised 18.5% of the Lead Teacher interview text, ranking second only to Leadership in importance, and 16.1% of the Principal

interviews, ranking third, after Leadership and Shared Purpose/Focus. Several key points of practice were identified during content analysis of the Lead Teacher interview data regarding the collaborative work of teachers in grade level teams. These key points distinguished teacher collaboration in the study schools as a process of collective inquiry rather than mere planning meetings or discussion sessions. The distinguishing features of inquiry-based teacher collaboration are presented in Table 3.

Table 3. Distinguishing Features of Teacher Collaboration

1	Collaborative meetings were driven by questions—"How can we get these skills across to these kids to get to the mastery level?"
2	Questions, in turn, were driven by a common goal—improving student achievement to the level of mastery of the standards;
3	Interim assessments were used to monitor progress toward this goal;
4	Analysis of data guided the inquiry process, "identifying what we need to do"
5	Actions were taken based on brainstorming and sharing of best practices for classroom instructional strategies, and
6	The entire process was strongly supported by school leaders.

Six strands of practice.

In addition to the points of practice that distinguished collaborative meetings, six strands of practice defined the work of teachers and administrators within these meetings. These strands of practice, as presented in Table 4, were identified through a thorough review and synthesis of the literature on collective inquiry. Each of the strands, in turn, contained several elements of practice, also derived from the literature.

Table 4. Six Strands of Practice in Collective Inquiry

1	Focus on student achievement / Results-driven
2	Data use
3	Reflective dialogue
4	Group dynamics
5	External structure
6	Leadership support

Note. Highlighted strands were included in the observations.

Observation results.

Of the six strands of practice identified as essential to the process of collective inquiry, four were readily observable in collaborative meetings: Focus on Student Achievement/Results-Driven, Data Use, Reflective Dialogue, and Group Dynamics. These four strands, along with their elements of practice, were developed into the Collective Inquiry Observation Tool which was then used to collect data from seven different collegial meetings across the three case study schools.

The results were reported by strand with frequencies and percentages depicting the prevalence of each element of practice within the strand. These findings shed light on the order of implementation involved in operationalizing the practices and underscored areas of practice that required more advanced skills. Further qualitative data from the narrative portions of the observation tool and archival records helped to clarify and elaborate on the findings.

The findings highlighted best practices in collective inquiry, in the four main strands. These practices are synthesized in Table 5, presented in two categories—common best practices and more advanced best practices—for each strand.

Table 5. Synthesis of Salient Findings in Collective Inquiry

Strands of practice	Common best practices	Advanced best practices
1. Focus on student achievement/ Results-driven	▪ Focused agenda with student achievement as the fundamental shared purpose ▪ Curriculum coverage of all standards ▪ Identification of focus standards ▪ Sharing of best classroom practices ▪ Clear criteria for proficiency on assessments ▪ Clear and simple communication of proficiency standards, assessment criteria, and performance outcomes to students	▪ Identification of students by name, proficiency level, and specific areas of need. ▪ Wide repertoire of assessment practices used to zero in on students' learning needs ▪ Communication of focus standards, expectations, resources, and ideas to parents in parent-friendly language ▪ Multidisciplinary, relevant, standards-based lessons that respond to student needs
2. Data use	▪ Clear goals tied to student achievement outcomes ▪ Frequent use of formal assessments ▪ Routine assessment procedures ▪ Current conditions discussed with honesty ▪ Identification of gaps in proficiency ▪ Strategies devised to address gaps in proficiency ▪ All decisions based on meaningful data ▪ Selection of instructional strategies tied to student performance data ▪ Student intervention focus and plans based on data	▪ Use of data to improve processes & decisions ▪ Student work samples tied to specific objectives and representing range of abilities ▪ Student level data, not averages ▪ Discussion of students' thought processes and reasoning—error analysis ▪ Protocols/templates specific to data & purpose ▪ Use of data with students to analyze own outcomes and set learning goals ▪ Student involvement in assessment decisions ▪ Use of data with parents to support students ▪ Professional development based on data ▪ Monitoring of team progress toward goals

Table 5. Synthesis of Salient Findings in Collective Inquiry (continued)

Strands of practice	Common best practices	Advanced best practices
3. Reflective dialogue	▪ Focus on continuous improvement of practices ▪ Sharing of practices, products, reflections, insights ▪ Continuous reflection on and sharing of practices ▪ Collective examination of what worked & why ▪ Response to changes in programs or practice ▪ Sharing of craft knowledge to improve instruction ▪ Identification of individual and group priorities ▪ Focus on curriculum, instruction, and assessment ▪ Many ideas generated for possible solutions ▪ Shared understanding and consensus-building ▪ Planning is designed to lead to coordinated action	▪ Questioning of assumptions about practice ▪ Professional development needs identified through questioning of assumptions and beliefs gently and relentlessly ▪ Strategies and actions are developed as hypotheses to test (action research) ▪ Lessons identified collectively and actions/ decisions modified and refined accordingly ▪ Decisions based on student learning impact ▪ Decisions and actions revisited to ensure follow-through and continuous improvement
4. Group dynamics	▪ Formal, talk-centered collegium, with defined roles, focused agenda, and distributed minutes ▪ Open and respectful communication & sharing ▪ Climate of trust, with mutually supportive relations ▪ Use of differences as resources for learning ▪ Encouragement of risk-taking and experimentation ▪ Faithful to agenda ▪ Focused on questions that matter most ▪ Responsibility for own learning as a group ▪ Committed to learning from decisions & actions	▪ Regular and frequent meetings begin on time ▪ Working norms give structure for dialogue, problem-solving, embracing diverse opinions ▪ Protocols and rituals that build rapport ▪ Problems address situations, not persons ▪ Acceptance of mistakes and messes as data ▪ Celebration of successes ▪ Strategies for efficient management of time ▪ Agenda and materials prepared in advance ▪ Unwilling to tolerate inaction ▪ Collective responsibility for group decisions ▪ Ongoing refinement of processes and practices ▪ Ongoing record of actions, and lessons learned ▪ Ongoing refinement of protocols/tools/templates

Summary of conclusions from Question 2.

The practice of collective inquiry permeated the systems of internal accountability at the schools and at the district level. It incorporated all of the findings from Question 1 of the study into Question 2. The following points summarize the conclusions regarding the systemic operationalization of collective inquiry practices in a professional learning community framework:

1. The study found that all of the professional learning community practices, including the three new practices identified in the study, were operationalized in collective inquiry.

2. Moreover, collective inquiry existed at all levels of practice—district level, district-school level, school level, grade level, and classroom level—and within each level, it was operationalized in collegial meetings.

3. At the school level, it was operationalized in staff meetings, Leadership Team and Data Action Team meetings, grade level meetings, vertical team meetings, Student Success Team meetings, etc.

4. At the district-school level, it was operationalized in cluster meetings, principal meetings, Data Action Team trainings, professional development meetings, curriculum committee meetings, resource teacher meetings, parent meetings, etc.

5. At the district level, it was operationalized in various divisional and departmental administrative team meetings.

6. Each level of collective inquiry work comprised a system of internal accountability.

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7. Thus, the collegial teams, all practicing collective inquiry at various levels of the district system, collectively created an intricate network of concentric and overlapping systems of internal accountability that aligned with one another and ultimately with the state accountability requirements.

8. Accountability trickled down, from state to district and schools, to various school level teams, to grade level teams, and to the classrooms. The classroom level implementation of collective inquiry with students and parents seemed to be the final step in implementation. Many of the teams that were observed identified this as a next step.

Conclusion

Thus, the three new findings from Question 1—District Direction/Support, Parent Involvement, and Expectations/Success Culture—expanded the understanding of collective inquiry processes and tools originally obtained from the literature. Additionally, the study provided both micro level and macro level details regarding the operationalization of these practices in intricate, aligned, interrelated, and interdependent systems of internal accountability.

Some Implications of the Study

This section sets forth several major implications for leaders and practitioners in districts and schools. It also suggests possible implications for future research.

Implications for Practice

This study delineates a practical framework for school reform. It holds powerful implications for improving practice and performance in schools and districts in today's high stakes accountability environment. It presents a new conception of education reform. It provides a framework for establishing internal accountability systems that are aligned with the external accountability demands. It presents collective inquiry as a tool for operationalizing internal networks of accountability. It redefines core practices such as leadership, collaboration, data use, professional development, and parent involvement within the context of collective inquiry. It provides practical and proven strategies for initiating these practices in schools. And it presents school and district leaders with a rich body of concrete examples—practices, protocols, and tools—that serve as a guide for study, reflection, dialogue, and application.

Premise: Commitment to Continuous Collaboration and Learning

Practitioners in districts and schools today thrive, survive, or perish in consequence of their collective response to the external demands of accountability policies. The focus of these policies is on quality, as defined by academic performance and measured by standardized tests. Moreover, the policies are in a state of continual change as states explore ways to respond to the federal mandates. Therefore, practitioners in districts and schools must implement internal systems of accountability that are (a) continually realigned with the demands of the performance-based external systems and (b) able to respond appropriately and urgently to changes in the performance mandates of the external system.

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Thus, surviving and thriving in today's performance accountability environment requires a framework for school reform that is systemic, inclusive, dynamic, and fluid so that it can accommodate the collective learning and response of an internal accountability system to the changing requirements of the external accountability environment. The findings from this study confirm that the professional learning community framework, as operationalized through collective inquiry, provides a suitable and sustainable framework for reform in today's accountability environment.

District and school practitioners would benefit from collectively exploring the assumptions, premises, and practices of a learning community approach and gradually implementing this framework in their efforts toward improved performance. This process involves close and collaborative examination of current practices using relevant data, coupled with a collective will to learn new insights, unlearn practices that do not yield desired results, and learn new practices, behaviors, and approaches that support shared goals. It implies a collective commitment to continuous collaboration and learning in support of meeting the goals and ensuring the welfare of the organization as a whole and its individual members.

Mobilizing Reform: Urgency, Data, and Disequilibrium

How does an organization become ready for such systemic reform, one in which constituents are ready and willing to examine their ingrained systems and practices with determination, courage, and openness to learning, unlearning, and relearning (Toffler, cited in Barth, 2001) of practices as needed? One of the findings of this study addressed the readiness of schools to engage in systemic reform. It was found that the schools had

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used current performance data in juxtaposition with the performance requirements of the external accountability system, and accompanied by information regarding the consequential stakes associated with failure, to create a sense of urgency for reform in the schools.

This finding had implications regarding the power of data in the hands of well-trained, well-informed, and wise leaders. In addition to ongoing use of data as the engine of collective inquiry which helps to inform decisions about practice, leaders may consider using data purposefully to leverage external accountability demands as a means of mobilizing reform and growth in the internal accountability systems of the school. In low-performing schools, this practice leads to the realization that the systems and practices that are in place are ineffective or, in the least, inadequate for meeting the external performance requirements to which they are accountable. This realization creates a sense of urgency and uncertainly that opens the door to collective inquiry: If what we have in place has not worked, what must we learn, unlearn, and relearn?

Thus, data may be used purposefully to generate disequilibrium in the system. As with dissipative structures in cell biology, the disequilibrium in schools generates rich opportunities for change toward higher levels of operation. Particularly, the crisis generated from the recognition of failure with respect to the accountability requirements, and the realization of the high stakes associated with this failure, together shake the system sufficiently to create openings for dialogue about deep change and to facilitate a willingness to let go of ineffective practices and experiment with new hypotheses for growth. In any change process, there is always a great cost associated with uncertainty.

Change occurs when schools recognize that the cost of not making change is greater than the cost of maintaining the status quo.

Motivating Reform: Incentive Systems

While the learning, unlearning, and relearning of practice is at the core of the process of change, the collaborative application of this dynamic in a data-driven, inquiry-based process aimed at continuous improvement constitutes the professional learning community. Thus, once the process of reform has been mobilized, leaders must explore ways to maintain the motivation, opportunity, access, skills, and support needed to sustain the work of collective inquiry in schools. An important implication for leaders in schools and districts, therefore, consists of sustaining the process of collective inquiry at all levels of the organization by establishing organizational structures and incentive systems, policies, and procedures that support the process of collective inquiry.

These incentives include structural elements such as access, location, and time; resources such as relevant data, tools, protocols, and instructional materials; capacity-building efforts such as training, coaching, supportive and relevant feedback, modeling, and shared leadership; and the more subtle but equally critical cultural elements that create a safe environment for collective inquiry by encouraging and rewarding inclusiveness, collaboration, dialogue, trust, questioning, experimentation, and responsible mistakes.

As the systems and processes in most schools and districts today carry some remnants of the top-down, linear, production establishments that schools and districts were modeled after, the changes implied in the creation of incentive structures that

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support collective inquiry may be difficult to identify and a challenge to implement. Leaders at every level of the organizational structures that comprise schools and districts must collectively and individually take close inventory of the organization's incentive systems, structures, policies, and procedures, examining both the explicit and implicit influences of these incentives on the desired goals and practices of the school community as a learning community. It is essential to modify and replace incentive systems, as needed, to create the appropriate and necessary environment for collective inquiry and to mobilize the will in the organization in the desired directions.

A characteristic example concerns the use of interim assessment results in the collective inquiry process of collegial teacher meetings. Data from common interim assessments are among the most useful sources of information in the collective inquiry work of teachers aimed at identifying student learning needs. Incentive structures that might use these assessment results summatively, to evaluate teachers, would in effect derail the process of open and honest reflective dialogue in collective inquiry. Such incentive structures, whether implicit or explicit, would render the dynamics of collective inquiry unsafe and inhospitable for forthright and trusting dialogue which is the vehicle of information creation in collective inquiry.

Examples such as the forgoing demonstrate the need for leaders to examine not only organizational incentive structures and systems but also the more subtle but equally powerful relational incentives. Leaders at both district and school levels, because of their role as lead learners and their role as evaluators of personnel performance, must pay close and vigilant attention to the strong, although sometimes unintentional, incentives

embedded in their own behaviors and practices in relating with other members of the district or school community.

Reconceptualizing Reform: A Spiral of Learning As Information Creation

One of the implications of collective inquiry as the engine of the professional learning community is a new notion of human development and growth that departs from a linear input-output model and embraces, instead, a dynamic concept of information creation in which each participant in the process is at once both a teacher and a learner, an active agent and a recipient, a producer and a product of the education good.

In the collective inquiry process, participants at all levels—in the classroom, in school level collegial meetings, in district level administrative meetings, in parent meetings, parent-teacher meetings, etc.—collaborate in the processing and creation of information. At all levels of practice, participants bring existing information into the disciplined and generative flow of reflective dialogue and engage data collectively to create new knowledge and information. They generate new understandings, processes, practices, learning, relationships, strategies, ideas, hypotheses, plans, and goals.

As participants move forward to implement their new learning, both collectively and individually, in the process of implementation they are themselves changed by the new experiences they undertake and undergo. They gain new insights, hone and expand their skills, build new kinds of relationships, develop new modes of communication, and acquire new beliefs about themselves and other participants in the process. These outputs, in turn, become the existing information that feeds back into the flow of reflective dialogue and generates yet another body of new information, knowledge, practices,

beliefs, and outcomes. The ongoing application of this generative process to the evolving goals of the group creates a process of continuous improvement and results in the systemic reform of the organization as a whole.

Thus, education practitioners may well need to adopt a new conception about the nature, process, and practice of education and its reform as a disciplined yet open and dynamic process of information creation that is both collective and individual, and that is goal-driven, inclusive, and continuous. Departing from linear input-output conceptions of education and reform, this conception may be represented as a systemic spiral of development that brings forth growth in its inputs as well as generating new and enhanced outputs.

Implementing Reform: Expansion and Focus in Information Creation

As leaders reconceptualize education reform and examine, rethink, and revamp the rules that create incentives at each level of the organizational structure to facilitate and reinforce collective inquiry—continuous, collaborative, data-driven learning—it is essential to consider organizational structures, values, and incentive systems that (a) ensure the focus and quality of data flowing into the process and (b) expand the breadth of information that flows into the process through collaboration. Collective inquiry may be conceptualized as a spiraling process of growth and development, learning and information creation. Figure 1 depicts the circular base of this spiral.
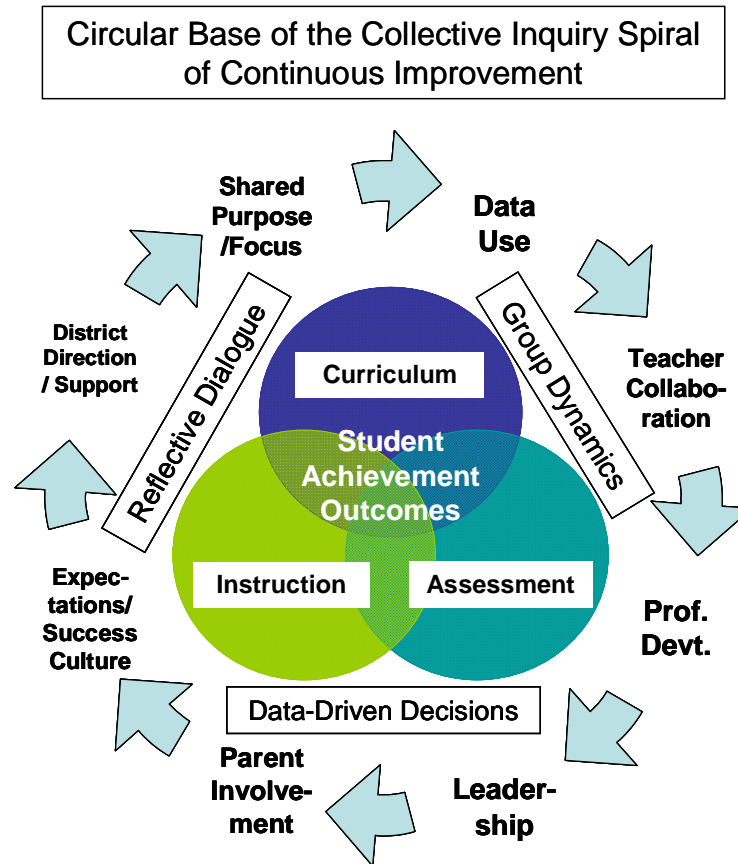
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Circular Base of the Collective Inquiry Spiral of Continuous Improvement

Shared Purpose /Focus

Data Use

District Direction / Support

Reflective Dialogue

Group Dynamics

Teacher Collabo-ration

Curriculum

Student Achievement Outcomes

Instruction

Assessment

Expec-tations/ Success Culture

Prof. Devt.

Data-Driven Decisions

Parent Involve-ment

Leader-ship

Figure 1. Circular Base of the Collective Cycle of Continuous Improvement.

Collective inquiry may be conceived of as a dynamic, spiral process of growth and development. The successful practices explored in this study may be thought of as channels of information that continually flow into the process of collective inquiry, at once informing the collective process and being enriched by it. At the core of the process is a focus on student achievement outcomes. These outcomes are supported by curriculum, instruction, and assessment. Group dynamics facilitate a collective process of reflective dialogue, which leads to data-driven decisions.

At the core of the collective inquiry process is a singular and disciplined focus on student achievement outcomes. These outcomes are supported by an aligned system of curriculum, instruction, and assessment. Collaborative teams engage in reflective dialogue, about curriculum, instruction, and assessment in support of specific student outcome goals. Their dialogue is enriched by the channels of information that flow into the process—the wider the channels, the richer the dialogue. Group dynamics facilitate the cohesion and openness of the dialogue, allowing for experimentation, hypothesis-testing, and decisions that are data-driven, collective, and results-oriented.

The three new practices that were identified in the first finding of this study—parent involvement, expectations/success culture, and district direction/support—may be conceptualized as three new channels of information that must be incorporated into the flow of data that informs the collective inquiry process. These three practices are included in Figure 1 among the other successful school improvement practices identified. Moreover, the fact that three additional practices were identified in this study implies leaders should stay open to identifying other channels of information that might enrich the process of collective inquiry and improve learning, practices, and outcomes.

This study identified parent involvement as one of the most important practices leading to improved student achievement in schools with low-performing, high-poverty, high-minority, high-language-learner student populations. Both teachers and principals in high-growth schools reported that one of their most successful practices in contributing to improved student achievement was inviting and empowering parents to participate as active agents in their work of data-driven, collective inquiry. It was noted as well,

however, that such collaboration is productive when it is part of the structured practice of collective inquiry, based on accurate and relevant data, and focused undeviatingly and relentlessly on meeting student achievement goals.

Thus, the study redefined parent involvement in the context of professional learning communities. Traditional approaches to parent involvement consist of the inclusion or engagement of parents in event-based and usually top-down activities of information-sharing and skill-building that are often separate from the core practices of the school. This study found the practice of parent involvement to be an integral part of the process of information generation through collective inquiry with teachers, students, and the leadership at the school. The implication of this finding for district and school practitioners requires a rethinking of the role of parents in the work of the school and the establishment of incentives and access throughout the organizational system to accommodate and encourage the collaborative participation of parents in data-driven learning along with other members of the school community.

This understanding implies that expanding the base of information flowing into the processes of collective inquiry to include all of the participants in the educational community matters greatly in strengthening the culture and process of school reform and in optimizing results. Therefore, district leaders and school practitioners must deliberately consider ways to widen the flow of information that feeds into the collective inquiry processes at the district and schools for the creation of new information. Specifically, the findings in this study point to the inclusion of parent involvement, district support, high expectations, and a culture of success in the collective inquiry work of schools.

In the schools under study, district and school collaboration had reached such an advanced level of synergy that the boundaries between school-based information and district-derived information were either blurred or entirely invisible.

The new channels of information, or inputs, generate outputs and outcomes that could not have been possible in their absence. District level direction and support provides a broader vision and expertise that may not have existed at the site. Parents, likewise, bring to the collective inquiry process certain essential elements of information and perspectives about students and student learning needs that teachers may not otherwise have access to.

In addition, collaborating as integral and active agents in the process of school improvement provides all participants with first-hand knowledge and experiences that further develop their capacities and capabilities. These capabilities feed back into the process of collective inquiry, continually advancing the learning of the group and its individual members, improving the outcomes of the school, and reinforcing and expanding the culture of learning and growth at the school. Participants gain a sense of ownership and pride in the accomplishments of the school. They develop shared vision and build and strengthen relationships with one another, founded in the unifying experience of collaboratively serving a common vision.

By implication, as districts and schools expand the channels of information flowing into the process of collective inquiry at various levels of the systems of internal accountability in the organization, they must exercise great care to ensure that the information flowing into the process is accurate, focused, and aligned with external

accountability requirements and the internal goals of the organization. The findings from Question 2 of the study underlined the importance of structures, norms, and protocols that strengthen and guide the work of collective inquiry and safeguard its focus and direction.

Leading Reform: Leadership Redefined

Leadership was consistently the most important practice identified in the overall and school level findings. The implications for leadership, however, extend far beyond merely highlighting the critical importance of the role. By implication, this study redefines leadership in the context of new conceptions of school reform and learning as information creation. It points to elements and practices in leadership that are essential in mobilizing and sustaining the building of professional learning communities. And it suggests strategies and tools for defining and maintaining focus while continually expanding participation in the generation of knowledge.

In a conception of education reform as a dynamic process of information creation in which each participant in the process is at once both a teacher and a learner, the leader's role is redefined from the top-down, directive, unilateral, authoritative expert to the lead learner—continuously learning while also facilitating the learning of the organization and its members. As such, the leader is at once directive with regard to the vision and direction of reform, committed to learning in the process of implementation of that vision, and able to empower others to be partners in the learning and implementation process.

Thus, leadership in a professional learning community implies that the leader integrates directive leadership with shared and collaborative leadership. Moreover, the

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leader is a continuous learner, researching best practices from the literature and from the field, learning from data, learning from colleagues and from staff, and continually transforming his or her own behaviors and practices. The leader then uses this learning as part of the flow of data that feeds into the organization's processes of collective inquiry for reflection, dialogue, group learning, collective planning, and implementation. Thus, the lead learner balances providing direction with allowing autonomy and shared leadership.

The leader's role in implementation is one of continued support to optimize success. The leader strives to empower all participants to engage in the process of collective inquiry at various levels of the organization, aimed at winning the goals of the organization. This task requires managing both the breadth of flow that informs the collective inquiry processes—expanding the information base through inviting and inclusive practices and incentive structures—and the depth and quality of the process. Thus, the leader's role in the implementation of the reform vision is reconceptualized with a focus on supporting the networks of collective inquiry in the organization.

The evaluative role of the leader, therefore, is also redefined. The leader who is concerned with ensuring the depth and quality of the processes of collective inquiry at various levels in the organization is intensely involved with collecting data about these processes. Such data might include school performance data, grade or department level data, student performance data, student work samples, teacher performance data, classroom walkthrough data, and observations of collegial meetings at various levels of the organizational structure both horizontal and vertical.

The leaders in the high-growth schools in this study used data prolifically and adeptly to monitor the work of teaching and learning. What was characteristic about their use of data was its purpose. These leaders used performance data at all levels to contribute to the learning of the organization and to motivate and support the growth of its members. The data they collected fed back into the internal accountability systems of the school as information to be used in reflective dialogue about improving performance. Thus, ongoing monitoring with multiple sources of data comprised a form of process evaluation that expanded the flow of information into the engine of collective inquiry, thereby strengthening the internal accountability systems of the schools.

It is important to note that the implications for leadership apply at all levels of the organizational structure, vertically—district leaders with school leaders, principals with teachers, and teachers with students—and horizontally—grade level meetings, department meetings, principal meetings, leadership team meetings, administrative team meetings, school-parent meetings, and student groups both within and outside of the classroom.

Accountability in Reform: Aligned Networks of Collective Inquiry

This study conceptualizes the collective inquiry processes, occurring at various levels within the organization, as forming the network of internal accountability systems that drive continuous improvement toward student achievement goals. These internal systems must be aligned with the requirements of the external accountability systems that dictate their focus and goals. The research literature (Abelmann & Elmore, 1999; Adams

& Kirst, 1999) emphasizes the importance of aligning internal and external accountability systems.

This study confirms the findings from the literature and expands upon them by presenting the internal accountability systems of schools and districts as an interconnected, aligned, and interdependent network of collective inquiry processes operationalized in collaborative teams. The extent to which the network of collective inquiry processes are integrated and aligned vertically and horizontally throughout the systems—from individual classrooms to the grade or department level, to the school level, to the community level, to the district level, and to the external state and federal systems—determines their success.

These dynamic flows of information exist simultaneously throughout various levels of the organization and in multiple forms and dimensions. Therefore, describing the macroscopic structure of these systems as horizontal and vertical limits their conception. The structure might more appropriately be likened to the integrated and interdependent systems that comprise a complex living organism. Collective inquiry groups may be likened to the cells of a body, each of which is a unique system in itself, yet also interacts with other cells to comprises larger systems such as tissues and organs, which comprise yet larger functional systems, that collectively make up the entire body. Each collective inquiry cell, like every living cell, is unique in its purpose and functions, yet, on a macro level, all are intricately integrated, communicate with one another, share vital information, and serve a common end goal. Figure 2 depicts the cells that make up

an embryonic nervous system as an analogy for the collective inquiry groups that together comprise the entire education system of a school or district.

All vital functions of a living organism occur within its cells. Likewise, in learning community schools and districts, collaborative teams generate the vital functions of the organization through processes of collective inquiry. Analogous to the clusters of cells in the nervous system, collective inquiry groups are closely connected with one another in clusters of internal accountability at the school and district levels. Examples include grade level teams, site-based leadership teams, and various district-level administrative teams.

These clusters, in turn, are connected via vertical networks of communication. Success is proportional to the degree to which these communications are aligned and supported at every level of leadership. In the district under study, the Division of Instructional Services provided support in the planning, implementation, and monitoring of the Academic Plan for Student Achievement at each school, thus using the school plan as a means of vertical alignment and accountability in the system. Vertical networks of communication were also implemented through a variety of district-site collaborative teams, such as Cluster Meetings, Level Meetings, Principal Meetings, and so forth. Hence, vertical accountability networks are themselves often operationalized through collective inquiry groups.

Thus, alignment is safeguarded within an intricate network of internal accountability, operationalized through processes of collective inquiry. This internal accountability system, in turn, is aligned with the external accountability environment.

Moreover, as the internal system is dynamic and organic, it is capable of continually

realigning itself with changes in the external system.

Internal Accountability Systems: Networks of Collective Inquiry
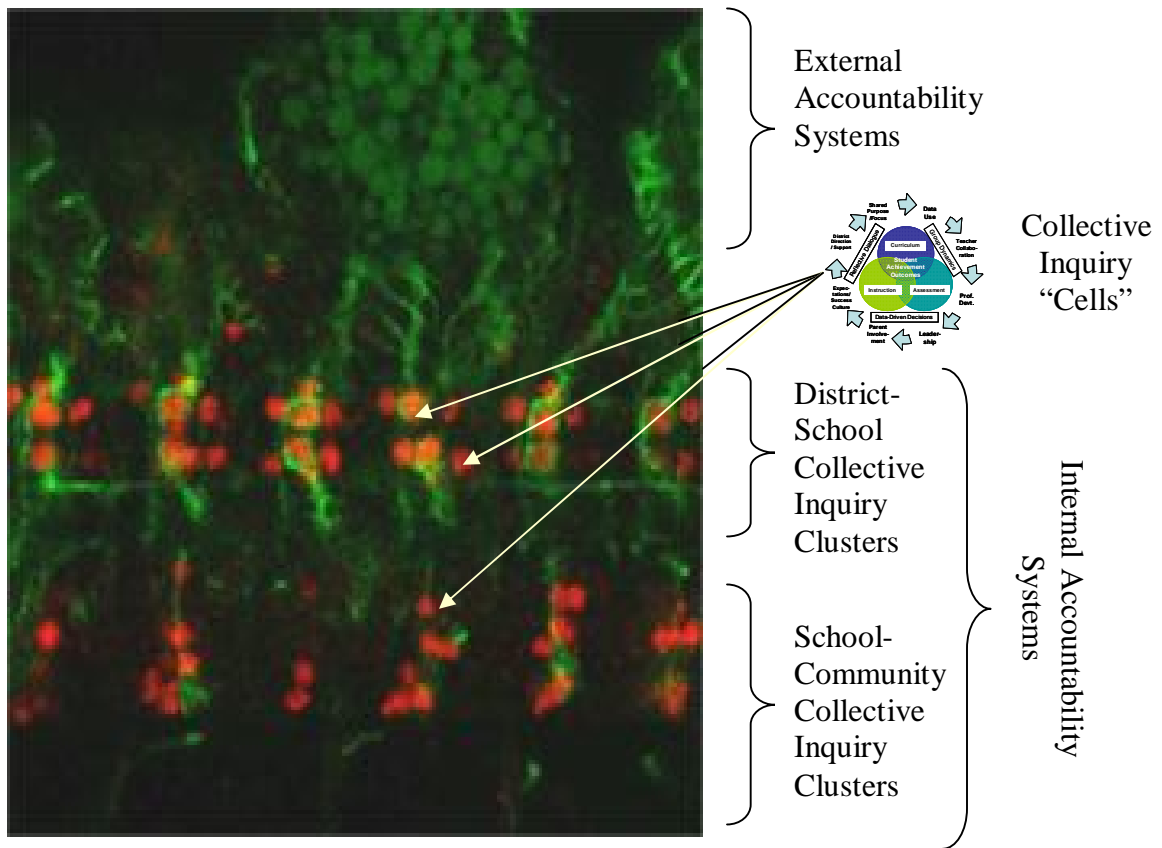

Figure 2. Internal Accountability Systems: Networks of Collective Inquiry.

This image of an embryonic nervous system depicts one of myriad systems in the body that are comprised of a network of smaller systems. Each cell may be thought of as a collaborative team, practicing collective inquiry. These teams form the fundamental structural and functional units of the organization, just as each cell is the base structural and functional unit of a living organism, carrying vital information, generating new information, and communicating that information to other cells as appropriate for furthering the growth and health of the organism.

This conception of the systems of internal accountability implies that "cells" of collective inquiry can be used to operationalize integrated and seamless reform throughout a school district. District Direction/Support, as identified and explored in this study, therefore, is generated through cycles of collective inquiry rather than mandated top-down, by the district. Vision and direction are developed collaboratively through reflective dialogue with homogeneous (e.g. district administrators) and heterogeneous (e.g. district and school administrators) groups. Professional development is both embedded in the process of collective inquiry and a data-driven outcome of the process. Support provided by the district is needs-based, as generated out of the collective inquiry processes of horizontal and vertical school and district teams. Conversely, district level changes requested by schools also emerge out of the processes of collective inquiry and are communicated via vertical school-district inquiry channels. This information then feeds into the district level inquiry processes for reflective dialogue, data-driven decisions, and action toward continuous improvement.

Quality in Reform: The Educational Experience

As a results of the foregoing implications for practice, the educational experience as a whole is improved. Members of the local educational community feel empowered. They enjoy working together. They enjoy learning from one another. They feel valued and respected. They gain pride in their work as they continually grow and develop in their profession. They are continually motivated as their actions are reinforced by improved outcomes. They collectively celebrate successes, and they do not fear failures

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or mistakes, for they treat failures as data from a tested hypothesis that helps them grow, redirect, and form new hypotheses for greater success.

Implications for Future Research

The implications of this study for both practice and research cannot be exhausted within the confines of this project. The study of the structures and processes that sustain continued growth are by definition inexhaustible. The previous section set forth a number of the most far-reaching implications for practices. This section suggests several complementary and additional studies that may be conducted to expand upon this research.

It was noted in the "Methods" section that the procedures utilized for case selection in this study led to the identification of elementary schools only. This finding pointed to the need to differentiate case selection procedures for elementary, middle, and high schools when using growth as a criterion for selection. Growth at the secondary levels, on average, was less than growth at the elementary levels. It would be valuable to replicate this study at the middle and high school levels separately, applying the case selection criteria to each group of schools independently. The results would provide for a comparison of successful operationalization of reform practices across levels.

Additionally, it was observed during this study that an experimental approach to the qualitative design used in this study may be applied by selecting a comparative group of schools in the same district that have similar demographics and have not made great gains in academic achievement. Such a design likely would confirm the findings of this

study and would expand upon them by providing information about obstacles that prevent schools from operationalizing practices that lead to growth.

Lastly, any number of the main practices identified in this study may be investigated further through a deep analysis of the subpractice results associated with each practice. This study explored the subcategory practices selectively, as indicated for a deeper understanding of the important practices or as needed for clarification of how the practices were operationalized. A deeper study of the subcategory indicators in may also be conducted in conjunction with the collective inquiry observations, correlating the observed practices with the reported practices from the interviews.

Final Note

This paper was designed as an abridged version of the study, with the addition of implications for practice and research, to provide the reader with a concrete understanding of the study and to generate both practical and theoretical implications and applications for improving systems of education and furthering the research that informs the practice.

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Appendix A. Interview Questions

Six Main Questions Used in the Interview Protocol

1. How do you explain the growth in student achievement at your school?

2. Who was involved in determining what actions were taken?

3. Explain how school improvement strategies were implemented.

4. What barriers were encountered as your school worked to improve student achievement?

5. Tell me about the three things you feel most significantly contributed to academic success at your school.

6. What one piece of advice would you give to a new principal who is trying to improve academic achievement at his/her school?

Author Note

The goal in the design and implementation of this project was to create a product with relevance and integrity that would be of value to the work of both practitioners and researchers in education reform. The study was inspired and informed by the author and researcher's academic and professional experiences with school reform, ranging several different perspectives:

- as an external partner to schools and districts engaged in education reform initiatives such as the Los Angeles Annenberg Metropolitan Project (LAAMP), the Immediate Intervention Underperforming Schools Program (IIUSP) and Comprehensive School Reform (CSR);

- as Board Member and Coordinator of Training for the Southern California Baha'i Training Institute;

- as a district administrator in a relatively large school district, building and strengthening systems of internal accountability through data use and collective inquiry, and developing the capacity of individuals to implement and sustain those systems; and

- currently as Director of the Institute at Indian Hill, an organizational research unit of Claremont Graduate University's School of Educational Studies serving as a coaching and capacity-building resource and as an external evaluator for reform processes in districts and schools;

- as an independent education consultant, facilitating planning, implementation and capacity-building for systemic reform in schools and districts; and

- as a researcher and scholar.

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