

The Role of Principals in Professional Learning Communities

Author Details:

Joan L. Buttram
Delaware Education R&D Center
University of Delaware
Newark, DE 19716

Elizabeth N. Farley-Ripple
School of Education
University of Delaware
Newark, DE 19716

Acknowledgements

The authors appreciate the support of the Spencer Foundation which funded the original study from which this paper stemmed.

Biographical Details (if applicable):

Joan L. Buttram is the Director of the Delaware Education R&D Center. She conducts research and evaluation on leadership, professional development, and school improvement.

Elizabeth N. Farley Ripple is an Assistant Professor in the School of Education. She studies how data are used in schools and districts for school improvement.

Structured Abstract:

The purpose of this paper is to identify how principals shape the adoption and implementation of professional learning communities. The study employed a sequential mixed methods approach in which interviews, observations, and document analysis informed survey design. Teachers were surveyed in four elementary schools about the practices and supports they received in grade level professional learning communities. Qualitative and survey data reveal that principals influence both what teachers undertake in professional learning communities and how well they carry out these activities. The study was limited to a small sample of only four schools in two districts and relied primarily on principal and teacher self-reports. More work is needed to explore the role of principals in a broader sample as well as the relationship between district and building leadership. Findings are discussed in terms of what actions principals can undertake to sustain meaningful professional communities. This paper provides guidance on how principals can influence and support teacher collaboration.

Keywords:

Leadership, Administrators, Professional Learning Communities

Article Classification:

Empirical Studies

Introduction

Research and practice suggest that “professional learning communities” (or PLCs) can serve as mechanisms to support instructional improvement (Dufour, 2003; Hord, 1997; Kruse, Seashore Louis, & Bryk, 1994). PLCs were originally conceived as structured time for classroom teachers to work collaboratively to develop their practice and share their wisdom. As McLaughlin and Talbert (2007) explain, “Learning communities provide opportunities for reflection and problem solving that allow teachers to construct knowledge based on what they know about students’ learning and evidence of their progress” (p. 5).

Given PLCs’ focus on instruction, classroom teachers often make up the majority of PLC membership. Although school-wide PLCs are not uncommon, many grade level meetings have been re-cast as PLCs to enhance instructional planning and professional development of classroom teachers. PLCs provide valuable time for teachers to jointly review student achievement data, develop lesson plans, share successful instructional strategies, discuss interventions for struggling students, provide mentoring for new teachers, and build the competency of more mature teachers (DuFour, DuFour, & Eaker, 2008; Kruse & Louis, 1993; Louis & Marks, 1998, Talbert, 2010).

What roles should principals play in such PLCs, particularly given the expectation that principals should be the instructional leader in the school? Principals play an important role in either helping or hindering their schools in achieving success (Tschannen-Moran, 2004; Portin, Knapp, Dareff, Feldman, Russell, Samuelson, & Yeh, 2009). Our understanding of the role of an effective principal has evolved over time. Initially, principals were seen as managers of their schools (Murphy, 2002). Over time, this thinking has evolved and most school leadership models now build on the view of collective action, through shared routines, to improve student outcomes (Copland, 2003; Fullan, 2001; Hallinger & Heck, 2010; Portin et al. 2009; Spillane, 2006). PLCs, by definition, provide fertile ground for building such collective action.

The specific steps that principals should take to nurture and support such collaborations are not clearly documented in the research literature. Although numerous practitioner-oriented guides exist for how principals can form and support PLCs (ASCD, 2009; Dufour, Dufour & Eaker, 2008; Kruse & Louis, 2009;

SREB, 2012), existing research focuses on strategies principals can use to exert instructional leadership across numerous situations. In order to connect these bodies of literature, the purpose of our study is to explore principal actions and the role of principals in supporting teacher collaboration through PLCs. We present findings of a multiple case study of four elementary schools in two districts implementing a state mandate in Delaware for weekly PLCs for grade level teams. These teams were charged with examining student data and planning instruction to meet students' needs. In the following pages, we present our conceptual framework and supporting literature, our data and methods, and results. We conclude by discussing implications for policy and practice.

Conceptual Framework and Relevant Literature

Our research builds on previous studies of principal leadership and teacher collaboration, including professional learning communities. Though there are many studies of each, there is little research that brings these two lines of inquiry together. Our purpose is to explore the ways in which principal actions can support productive teacher collaboration. To do this, we first consider principals' understanding of the reform initiative. We then focus on three aspects of instructional research commonly described in the literature: building a culture of high expectations for student learning, enhancing teacher knowledge and skills, and allocating and managing resources. We also define the outcome – productive teacher collaboration in PLCs – based on previous research. These are explained below.

Principals' Understanding of the Reform Initiative

Principals often serve as key communicators in disseminating information about reform initiatives in their school buildings (Heck, 1992; Portin et al, 2009). Teachers typically have little direct access to policymakers and thus rely on principals (and other district officials) to help them understand what reform initiatives, or in this case, state mandates, mean for their daily practice. Coburn (2005) reports that principals influence how teachers both directly and indirectly make sense of such reform initiatives and what they mean for their classroom practice. Cosner (2011a, 2011b) further explains that principals view their role as “reform communicator” as essential in shaping the goals, purposes, expectations, and activities for their teachers. Gilley, Gilley, & McMillan (2009) found that leader communication was one of only two leadership

behaviors that predicted the effectiveness of leaders' managing change. Given the critical role that principals' understandings play, we will examine how principals interpreted the Delaware Department of Education (DE DoE) PLC mandate in their respective buildings.

Building a Culture Focused on High Expectations for Student Learning

Researchers generally agree that principals have a measurable, but indirect, effect on student achievement (Leithwood, Louis, Anderson, & Wahlstrom, 2004; Supovitz, Sirinides, & May, 2009; Waters, Marzano, & McNulty, 2003). Effective principals promote student achievement by defining a school mission focused on student learning (Goldring & Pasternak, 1994; Hallinger & Murphy, 1987; Hallinger, Bickman, & Davis, 1996; Witziers, Bosker, & Krueger, 2003), setting high expectations for student achievement (Blaze & Kirby, 2000; Leithwood et al, 1993; Portin et al, 2009; Purkey & Smith, 1982), and holding teachers (and students) accountable for their performance (Elmore & Fuhrman, 2001; Finnegan, 2010). Other research suggests that building shared values and trust among teachers contributes to building a culture characterized by high levels of student performance (Bryk & Schneider, 2002; Kruse et al., 1994; Hord, 1997; McLaughlin & Talbert, 2001; Owens, 2001; Waters et al., 2003). In essence, principals help define the culture of the school. Principals are responsible for creating a culture of expectations and holding individuals accountable for their contributions to the collective result (Elmore, 2000; Golding et al 2007). PLCs provide one option for fostering teacher collegiality and shared accountability.

Enhancing Teachers' Knowledge and Skills

Elmore and his colleagues (Elmore, Peterson, & McCarthy, 1996) suggest that enhancing teacher collegiality through PLCs, by itself, is unlikely to produce changes in teacher practice; principals must focus teacher collaborative work on accessing and acquiring new knowledge and skills. Clark & Astuto (1994) agree that the principal's role in nurturing a PLC will be complex, challenging, and problematic because of PLC's roots in collegiality and professional practice. Principals build teacher knowledge and skills by working with teachers and others who are directly engaged in instruction (Hallinger, 2003; Louis, Dretzke, & Wahlstrom, 2009; Marks & Printy, 2003; Reitzu & West, 2011; Sheppard, 1996; Supovitz et al., 2010). Effective strategies include creating a vision for instructional quality (Supovitz & Poglinco, 2001),

identifying and disseminating effective instructional strategies (Leithwood & Montgomery, 1982; Sebring & Bryk, 2000), working directly with teachers to strengthen their classroom instruction (Heck, Larson, & Marcoulides, 1990; May & Supovitz, 2020; Waters et al. 2003), and organizing professional development opportunities (Heck et al., 1990). Other research emphasizes the importance of deprivatizing practice among teachers and engaging in reflective dialogue in the development of these skills (Kruse, Louis, & Bryk, 1995; Lieberman, Saxl, & Miles, 1988; Little, 1990, Newmann, 1991).

Allocating and Managing Resources

Principals also exert leadership by the decisions they make in allocating and managing resources (Bryk et al 1998; Miller et al 2010; Sherer & Spillane, 2012). For example, the availability of structured time is critical for successful collaboration (Cosner, 2011; Suppovitz, 2002; Wood, 2007). Other resources shown to impact successful collaboration include access to professional development (Louis, Marks, & Kruse, 1996; Melnick & Witmer, 1996), instructional coaches and other resource staff who can support teachers' instruction (Coburn et al 2012; Talbert, 2010), and tools or guides that help lead teachers in collaborative activities (DuFour, DuFour, & Eaker, 2008; Talbert, 2010). The necessary supports vary over time as the PLC matures; effective principals vary the resources available to PLCs depending on their needs (Talbert, 2010).

Productive Teacher Collaboration in PLCs

The Delaware Department of Education's (DE DoE) theory of action assumes that productive teacher collaboration, in PLCs, will lead to improved instruction. Talbert (2010) suggests that successful collaboration depends on the following conditions: 1) norms of collaboration, 2) focus on students and their academic experience, 3) access to a wide range of learning resources for individuals and the group, and 4) mutual accountability for student growth and success. Of particular importance is the tension between the long-standing tradition of teacher isolation and autonomy (Lortie, 1975; Woods, 2007) versus deprivatization of practice and collective responsibility (Little, 1982; Louis & Marks, 1998, Louis, Marks, & Kruse, 1996). This represents a major shift for many teachers, and not always a comfortable one given the turnover in teacher assignments, especially in low-performing schools where instructional improvements are most

needed. To measure successful teacher collaboration, we include the variables of shared norms, reflective dialogue, deprivatized practice, collective responsibility, shared leadership (Kruse & Seashore-Louis, 1993), and teacher trust (Hoy & Tschannen-Moran, 2003). Although these were conceived as contextual measures in our original study, we include them in this re-analysis as outcome measures.

Research Context

As part of its Race to the Top plan, the DE DoE mandated that all schools provide 90 minutes of weekly collaborative planning time for teachers and leaders to meet in grade level or subject area teams to examine student data and plan instruction to meet students' needs. The DE DoE model included four components in its definition of effective collaborative planning: 1) analysis of evidence of student learning, 2) discussion about teaching practice, 3) instructional planning, and 4) team leadership and facilitation. The DE DoE's underlying logic holds that the effective teacher is the "single most powerful lever to impact student learning," and that collaborative learning time is a correspondingly powerful lever for improving teaching. The Department's theory of action also acknowledges that the mandate alone will not foster the outcomes intended. Certain conditions are necessary for fostering effective collaborative planning time, including timely and relevant data provision; curricular and planning tools and resources; protected time for collaboration; and a district culture of continuous learning and improvement. In addition, school and district leadership are expected to provide support and resources for the implementation of this mandate. The DE DoE did not offer any formal training to districts or schools on initiating PLCs, relying instead on the dissemination of web-based materials and districts' previous experience with PLCs. The DE DoE did provide funding "data coaches" who provided limited assistance to PLCs in understanding and interpreting data; our sample of schools did not receive data coaches during the study.

In 2010-2011, all Delaware schools implemented the mandated "PLC time." We examine how this mandate is implemented in a small sample of schools, with a focus on the relationship between principal leadership and PLC implementation. Our expectation is that most schools will follow the policy mandate pro forma, but suspect that particular leadership actions will lead to variability in PLC practices. As noted above, the state plan is banking on more than compliant response from districts, schools, and teachers to be

successful in improving student achievement. School principals potentially can influence the success of this mandate by determining how it is translated into practice.

The purpose of this paper is to identify how principals shape the adoption and implementation of PLCs in response to the Delaware state mandate, using the above research as a framework for examining their actions. As reinforced by Cranston (2009), how principals conceive of the purpose and goals of PLCs will influence their actions.

Methodology

The purpose of the original research was to examine the use of data for school-wide improvement in four schools. Early in the course of data collection, the districts and schools in our sample identified PLCs as a key mechanism for supporting instructional improvement. We refocused our data collection efforts to explore the role of PLCs in each of the schools, particularly teachers' use of data in PLCs (Authors, 2012; Authors, in press). As we analyzed these data, we realized that principals play a pivotal role in translating the state mandate to practice. This study reanalyzes our data to answer the following research questions:

1. How do principals understand the state mandate and expectations for PLCs?
2. What actions do principals take to implement the state mandate in their respective schools?
3. How are these actions related to the development of teacher collaboration?

The study employed a sequential mixed methods approach in which interviews, observations, and document analysis informed survey design. Data were collected during the 2010-2011 school year from four elementary schools in two Delaware districts. Districts were selected based on comparable size and diversity of population. Schools were selected with the advice of the superintendents, who identified one school where data use was considered strength and another as an area of improvement. We recognize the fallibility of this method of identifying a purposive sample of schools, but lacking more objective indicators of data use, we must rely on those administrators best positioned to assess schools' practices. Table 1 provides demographic and achievement profiles for the four sites.

Insert Table 1 about here

Qualitative data took the form of semi-structured interviews with nine central office administrators in two districts, selecting based on title and superintendent's recommendation those responsible for issues related to curriculum, instruction, accountability, and data. We conducted single interviews with ten school leaders across the four schools, which included the principal, school leadership teams (this structure was present in three sites), and teacher leaders (recommended by the principal in two sites). We also conducted 21 school-site visits, including a mix of school leadership meetings, professional development, and professional learning community time. Lastly, we obtained documents from school principals and teacher leaders by request. We asked for documents related to school improvement planning, PLC administration (e.g. agendas), and data use. Schools varied in what they sent, ranging from complete minutes of meetings and reports on grade level data to simply sending the school action plan. Publicly available documents from the DE DoE were also used to identify state and district approaches to PLCs, evidenced through district Race to the Top plans and state LEA Support Program documents.

The research team reviewed the qualitative data to inform the survey, administered in May-June of 2011. The portion of the survey which dealt exclusively with PLC practices included questions about a) frequency and length of meetings, b) attendance from coaches or administrators, c) content of meetings as they relate to curriculum and instruction, and d) expectations, supports, and practices related to data use. We relied on interview and observation data to create response sets related to scheduling and implementation of PLCs and to identify a set of practices that were likely to occur during PLC time. Additional portions of the survey were also used in the analysis of PLC implementation. Questions about data use and school culture scales were also included. For school culture, we draw on previous research on professional community and professional learning communities to identify conditions which support effective teacher collaboration. To this end, we included variations on existing scales from previous research. These include shared norms, reflective dialogue, deprivatized practice, collective responsibility, and shared leadership from the work of Seashore Louis and colleagues (Kruse & Seashore Louis, 1993; Kruse et al 1994), teacher trust from the work of Hoy and Tschannen-Moran (2003), and principal leadership from the work of Wayman and colleagues (2009). Appendix A presents more information about the items and reliability.

Qualitative data were initially coded using an a priori framework based on the purposes of the larger study; this framework used broad themes to create tree nodes in NVivo9 related to PLCs, school and district context, data, state policy and accountability, and supports/expectations for data use. Codes were not mutually exclusive and our focus in this paper relates to data coded under PLCs. The initial set of codes was completed by the research team, with two rounds of reliability tests to ensure at least 90% agreement. Differences in rates were observed to be related only to the degree to which surrounding material was coded. After the initial coding was complete, one member of the research team utilized a combination of an a priori coding process related to PLCs and open coding strategy to capture emergent patterns. These were created as a second layer of tree nodes under the first-level PLC code. The second member of the research team conducted a member check to identify any potential problems with the second layer of coding. NVivo9 was then utilized to create a matrix in which the second level PLC codes were disaggregated by school site (columns) and data source (e.g. central office, school leaders, documents) to enable analysis of the data within and across cases.

The survey was administered to all instructional staff in each school, with greater than 80% response rates from three schools and a 60% response rate in the fourth. In the three schools with the highest response rate, the survey was administered on paper during a faculty meeting at the close of the school year. The survey was administered online to the fourth school, which explains the difference in response rate. However, responses in this school were distributed across all grade levels (and therefore PLCs) which means that data are available to characterize all PLCs in this school. In total, 42 members of the staff responded from School A1, 24 from A2, 39 from B1, and 35 from B2.

Survey data have been analyzed descriptively to compare responses between schools and districts. For items producing nominal and ordinal data, we utilized cross-tabulation and chi-square tests for statistical significance. For items producing data that can be interpreted as numerical data (e.g. agreement scales), we compare means and utilize t-tests or ANOVAs to identify statistically significant differences between schools. It is important to acknowledge the nested nature of the survey data. Conceptually, teachers are nested within PLCs, which are nested within schools. There are many important questions that could be

considered in an analysis of PLC implementation both within and across schools. Our analysis revealed few statistically significant differences between PLCs within schools and many significant differences between schools. We therefore present school-wide differences in the implementation of PLCs, noting statistically significant within school variability where relevant.

Our analytical methods are consistent with a cross-case synthesis approach in which each school and district are analyzed separately for relevant themes and results are compared across cases. The qualitative matrix and disaggregated survey results by school were integrated to create a larger matrix organized by research question. This facilitated mixed-methods analysis to each research question and the development of a PLC profile of each school.

Results

Principals' Understanding of State Mandate

At the time of the PLC state mandate, not all schools were new to the concept. Schools A1, B1, and B2 had prior experience with PLCs. The principal in A1 had introduced PLCs to each grade level during his first year in the building as a way to build teacher skills as well as promote high expectations for student achievement. In District B, PLCs were introduced by a previous superintendent and grade-level PLCs were part of all elementary buildings.

In spite of a common emphasis in districts and schools that PLCs were a vehicle of for improving instruction, data revealed differences in how principals articulated and communicated the role of PLCs in their larger improvement efforts. District A considered PLCs a “cornerstone” of improvement and made explicit the ways in which PLCs integrate efforts to improve instructional strategies, meet the academic and non-academic needs of diverse students, develop and align curriculum and assessment, and provide professional development. District B considered PLCs to be a “prominent feature of [the district] culture” and prioritized PLCs as a mechanism for using data to improve instruction.

District A's understanding was evident, to varying degrees, in both principals' understanding of and expectations for PLCs. The principal at School A1 emphasized team and leadership development through collaboration, and suggested that many teaching-related activities should be done in this collaborative

environment, including discussing lesson plans, sharing activities, discussing how students are doing, and ultimately delving into specific topics based on an agenda and goals they would develop together.

We...bring people together...we're doing classroom observations through the PLC; we're videotaping instructions through the PLC; we're having teachers model lessons to their team as a PLC. So it's been a process of improvement as far as how we run our PLCs, what we do.

In School A2, the principal had longer term expectations for similar types of PLC activities, but recognized the first year was a learning process.

There's a certain amount of I'm not really sure exactly how this is supposed to look, so I'm trying to do my best to try and adhere to what I'm being asked to do... whether or not it makes sense all the time, and that is just part of the learning process...It really is, we are still in the learning process of all of this.

He felt that PLCs in his school were improving in terms of looking at student data to better understand student learning, but that teams varied in whether they were able to set instructional goals based on that understanding. This, he hoped, was a direction that would be taken in the next year.

In School B1, the principal similarly emphasized PLCs as a vehicle for using data to inform instruction. As the principal stated, “the focus is to be on instruction and guiding the instruction through data.” In School B2, the principal did not explicitly discuss expectations for PLCs in terms of data use for instruction, but rather stated “the expectation is first of all you talk about lessons...for example there's a pacing... we like for the teachers to plan together.” Additionally, Principal B2 emphasized the role of PLCs in empowering teachers to make and participate in decisions as well as the collaborative purposes of PLCs.

Principals' Actions to Implement PLCs in Their Schools

Our data revealed that principals took steps to support the implementation of the state PLC mandate in their building through various means, including creating a culture focused on high expectations for student learning, enhancing teacher knowledge and skills, and allocating and managing resources.

Creating a Culture Focused on High Expectations for Student Learning.

Our four principals cultivated different cultures based on their understanding of the state mandate and district vision for PLCs, along with their past experience with PLCs. As noted above, three of the four school principals and their respective faculties had experience with PLCs on which to build.

School A1 principal sought to create a culture based on teacher development, shared leadership, and high expectations. As he explained,

Well, I think my strength is team building; that's a strength of mine as a principal, helping people work together – that's always been a strength...And the same now, the same thing is happening with PLCs where it was like I always thought it was a good idea because I've read about it or I was using my leadership style which is team building and how do people collaborate with each other; something I always believed in, I felt it was important, now is being confirmed or it's being solidified that, yeah, this is actually what you should be doing...I'm kind of getting additional push that it is okay to be doing those things. So I think it was really a choice, as a leadership style choice that I wanted to do. I embraced it and that was just my way that I did things.

The other three school principals did not explicitly talk about using PLCs to build a culture of high expectations. Because of School A2's lack of experience with PLCs, Principal A2 was focused on the mechanics, he was "learning along with the teachers." Both School B1 and B2 principals were accustomed to having PLCs in their buildings and so did not use the state PLC mandate to further develop the culture in their buildings. Instead, they emphasized instructional planning, pacing, and using data in their interactions with teachers. As Principal B2 noted

the expectation is first of all you talk about lessons that you – for example there's a pacing. And everyone, we like for the teachers to plan together.

Setting goals and then monitoring their accomplishment helps support a culture of high expectations focused on student learning. Given the emphasis in Delaware on data use, we looked at the expectations set by principals for what teachers should work on in their PLCs, particularly related to data use. Principal A1 took the most public stand on data use,

We all look at the data. So everybody...that's the other big thing is the data is very...it's across the board. We look at your data on the team and we look at your data as the teacher on the team and we don't hide your data from you but it's all out in the front. So that's something that was...I know change...there's change this year in our school district based on this philosophy from this school but I know for a fact that other schools were very, very hiding behind their data. I didn't want to upset Mrs. So-and-So because I don't want her to feel embarrassed that Mr. Getty's classroom did much better or outperformed her better or something like that. We don't do it here; we pretty much put everything on a Smart Board, we look at it together or projecting screen and we go through data service and we click on individual teachers and we try to target kids that are really struggling.

All four of the principals expected teachers to use data to assess student learning, plan instruction, identify students needing interventions, and coordinate pacing across the different classrooms at grade levels. Our survey gathered ratings on whether clear guidelines for using data were set and whether teachers were expected to use data to guide PLC conversations. The four schools varied in the expectations for data use set by principals. Schools A1, A2, and B1 all reported agreement about expectations for using data (means >5 on a 6 point scale), while teachers were less likely to agree in B2 (mean=4.5). In spite of general agreement about expectations, these manifested themselves differently across schools and districts in school observations. In School A1, teachers were expected to examine data on district quarterly benchmark or formative tests and to set short-term goals for student performance between these tests. Smartboards were used to post both goals and student results by individual teacher in faculty meetings; these meetings also were used to celebrate successes. In School A2, PLCs were allowed to decide how to set goals; data were shared across individual team members but not across different grades. In Schools B1 and B2, discussions about data focused more on state-mandated tests rather than district benchmark or formative tests. B1 and B2 PLCs set annual goals, but there was no expectation to set short-term goals for student performance on these tests and no sharing across grade levels or the overall school. In addition, neither B1 nor B2 celebrated successes during the school year.

Principals also reinforced high expectations by monitoring implementation. The four principals varied in terms of their regular attendance at PLC meetings and review of agendas and minutes. In School A1 survey responses, 60% reported an administrator comes to most or every meeting. Importantly, there was no significant variability between PLCs. As Principal A1 observed

You have to be actively involved in the process and participate along with the team. I consider my role primarily to support the collaborative process of these teachers to create that kind of culture or team work; I consider that to be my most important role. And then monitoring what's going on, walkthroughs and visiting classrooms...

In School A2, the majority indicated the principal attended some meetings, but 40.9% reported rare attendance by an administrator. Survey respondents in Schools B1 and B2 reported little consistent involvement from administrators. In both, about half indicated that administrators attend some meetings with the rest reporting less frequent attendance. Both Principals B1 and B2 had a very hands-off approach to PLCs. Principal B1 did not want to be viewed as “the PLC police.”

Insert Table 2

Enhancing Teachers' Knowledge and Skills.

Because of the focus of the original study, we gathered data on principals' strategies to enhance teachers' knowledge and skills in using data. Principals provided training and direct assistance either first-hand or through instructional coaches in numerous areas: manipulating and using data to plan instruction, identify students who require interventions, and determine progress or attainment of goals. As Principal A explained,

So they would be required to really look at the data...So you keep doing that over and over, you're going to get a little better at it. You're going to get more familiar with it and that happens at each grade level, so they're doing it in small teams as opposed to a large team... this allows them to have more responsibility for it ...And I'll be there with them while they're doing it; my literacy coach will be in attendance; my math interventionist will be there.

Principals reported that teachers struggle the most with using data to evaluate instruction and plan the next round. Principal A2 summarized this challenge:

A lot of the reports that we get within the service, the ones that are valid or good pieces that you don't have to do much with that, but when you start to evaluate the data and you start to say, "Okay, what do I see from this?" How do I look at the data and say, "Okay, this is the direction I need to go in?"

Our survey examined administrator involvement in providing training and assistance related to data use (see Table 3). Principal A1 consistently supports teachers in using data in his school by modeling data use at both PLC and school-wide meetings; created opportunities for teachers to use data; and provided training or assistance in using data in PLCs, either directly or indirectly through instructional coaches. Principal B1 scored high on all three as well; this school has a rich tradition of using data, overseeing student data was a primary responsibility of the principal when she was the assistant principal in this school and likely contributed to high survey ratings. Principals A2 and B2 had more moderate ratings, perhaps due to their lesser direct interaction with PLCs in their respective buildings.

Insert Table 3

Allocating and Managing Resources.

Our data revealed differences across the four principals in terms of scheduling time for collaboration, providing supports, and providing data supports (see Table 4 below).

Scheduling of Time. Both observational and survey data revealed different approaches to structuring the collaborative planning time mandated by the state. Principals in both schools in District A consistently met the mandate for 90 min. weekly meetings by scheduling 45 min. during the school day and 45 min. before or after school on a regular basis; this practice was explicitly adopted by the district in its Race to the Top implementation plan. Both schools utilized a combination of time during the school day and some before or after school time to meet the time requirements. They were able to do this through creative scheduling with related arts teachers, reading or math coaches, or other personnel without detracting from instructional time with students. For the two schools in District B, compliance was an issue. Schools B1 and B2 did not establish a consistent schedule, provide time during the school day, or meet the required minutes every week. In School B1, PLCs met bi-weekly (22%), weekly (54%), or less (24%) and for varied lengths of time that did not always meet the 90 minute mandate. In B2, PLCs met one time per week, but for between 30 and 90

minutes depending on the team, with only 10% of teachers reporting 90 minutes of PLC time. Both schools' PLCs were scheduled for the end of the school day, which leaders explained was a function of finding adequate coverage for classrooms during the day.

Insert Table 4

Provisions of Support. Our data illustrate significant variability in the supports provided by principals to PLCs. Within District A, the schools differed in the supports integrated into grade level PLCs. In School A1, PLCs received frequent and consistent attendance from an assigned specialist. In the survey, 92% of teachers reported a specialist coming to most or every meeting. Importantly, there was no significant variability between PLCs. Interviews and observations revealed that in this school, the principal assigned instructional specialists – reading coaches and teachers, math interventionists, ELL teachers, and district instructional coaches – to all teams. The specialist varied, depending on the needs of the PLCs and their needs. They served many purposes, including helping to interpret student data, suggesting instructional materials or strategies, modeling or co-teaching, and working with groups of students when necessary. They also kept their respective PLCs focused on the task at hand. Principal A1 observed:

So it doesn't always have to be the interventionist but, primarily, those are the people that are really kind of the movers and the shakers of...they're the leaders of the school really. In my school, if you're an interventionist, you're told that you are a leader; you are not put in this position just because you had a degree of reading or the math teachers is an elementary teacher but she's an outstanding teacher. So I tell them upfront you are being put in a leadership role, you are responsible for being outspoken and addressing these concerns and communicating with me about them and what you're doing. So we have a very hands-on type of approach to things that make sense.

In School A2, the principal assigned instructional specialists more sporadically. In the survey, 27.2% reported a specialist coming to every or most meetings while 27.3% reported they rarely attend. In this school, the specialists and principal met regularly as their own PLC, to discuss the progress of individual grade PLCs and determine necessary supports, but more often to individual teachers or groups of students, rather than as a resource to the entire PLC.

In District B, there were less explicit supports for PLC implementation. As the Superintendent stated, “we don’t really think of PLCs as an initiative for us anymore because it’s just part of what we do.” Based on survey data, B1 and B2 teachers reported little consistent involvement from instructional specialists. In both B1 and B2, only 10% of teachers reported a specialist coming to every or most meetings, while more than half in each school indicated these resources rarely or never attend meetings. According to interviews, instructional specialists’ role in PLCs varied, with some considering their presence to be a resource for teachers to use if needed, and if not, as passive observers.

Providing Data Supports. A key feature of the DE DoE state mandate was the expectation that teachers would examine student data to make decisions about instruction. All four schools had access to a statewide data service center to provide data files and reports summarizing student achievement on local assessment as well as state achievement data imported into this same database. This freed teachers, schools, and districts from compiling student information. Teachers are able to log on to a central system and download comprehensive reports on their own students across a broad set of measures. Unlike the three other schools, teachers in School A1 could see data for all students in their school, not just their own grade level; this access was purposefully arranged by the principal to facilitate both horizontal and vertical alignment. Teachers in School A1 agreed that their principal helps guide data use (mean=4.70, 6-point scale). Teachers in the other three schools varied whether an administrator/specialist is available to guide data use: School A2 had a mean of 3.5, School B1 had a mean of 4.0, and School B2 had a mean of 3.8.

Development of Teacher Collaboration

PLCs, by their very presence, promote teacher collaboration. We looked to see if the PLCs in our four schools reflected variables associated with collaborative practice, including shared norms, trust, shared leadership, collective responsibility, and deprivatized practice. Survey responses provided measures of each of these variables (see Table 5 below; see Appendix A for information on these measures).

Not surprisingly, School A1 consistently demonstrated the highest ratings on these measures, 20 of the 24 item mean ratings were 5.00 or greater (on 6-point scale). Survey ratings suggest that teacher collaboration is strongly promoted and reinforced. As Principal A1 noted

And it wasn't like me sitting here doing everything, I think if you have some other good people around you and you let them know that they have permission to be leaders and that they are given some freedom to maybe even make some mistakes. I think that helps a lot, too. If I had to be in control of everything, I think that would have really kind of bogged down that process.

Teachers in School A1 shared a similar set of norms, trusted each other, participated in decision making as individuals and teams, felt responsible to help each other, discussed school goals and teaching practice, and visited each other's classrooms.

School A2, least experienced in PLCs, demonstrated the weakest performance on all six measures. Highest survey ratings were related to discussions about the school's goals and what helps students learn and may signal the school's ongoing development toward collaborative practice. Although School B1 scored slightly higher than School B2, the differences were often marginal with the exception of deprivatized practice and shared leadership, where School B1 scored higher.

In examining the magnitude of the ratings across all schools (actual ratings versus total possible ratings), reflective dialogue and shared norms were the highest (83.4 percent and 82.4 percent), teacher trust and collective responsibility were third and fourth (78.3 percent and 76.0 percent), and deprivatized practice and shared leadership were tied (68.0 percent). These ratings may be indicative of the development of teacher collaborative practice.

We also looked at specific teacher collaborations related to data use, including using data in conversations with instructional specialists or administrators related to teaching and learning in their classroom as well as sharing or celebrating student success with other teachers. School A1's survey ratings were highest, followed by School A2, B2, and B1. Interestingly, conversations with principals referencing data occurred less frequently in all four schools. In Schools A1 and A2, conversations with instructional specialists scored highest while in Schools B1 and B2, sharing or celebrating student success with other teachers occurred most frequently.

Insert Table 5

Discussion

Data from the larger study reveal that across these four schools, a continuum of adoption of the Delaware state mandate for PLCs exists. Our purpose has been to understand how principals can contribute to the adoption and implementation of PLCs in response to the Delaware state mandate as a way of understanding the observed continuum for 90 minutes of collaborative planning time.

Our evidence suggests that principals' responses to the state mandate influenced PLC implementation in their respective schools. In Delaware, PLCs were conceived as opportunities for teacher collaboration in grade level or subject area teams to examine student data and plan instruction to meet students' needs. At one end, Principal A1 exceeded minimum expectations in terms of time and school support and shows the strongest evidence of collaborative practice. Ultimately the highest achieving, School A1 is in many ways the model of what the state mandate intended to achieve. In contrast, the other three schools struggled to produce the same results. Although there are multiple possibilities why these differences occurred, our analysis suggests that principals' actions were a contributing factor. Of particular importance were the steps that principal took to set expectations, enhance teacher knowledge and skills, and provide resources to support teacher collaboration.

The four principals in our study had different expectations for grade level PLCs which may explain differences in how PLCs were implemented and what they accomplished. The principal in School A1 emphasized team and leadership development; Principal A2 shared some of this same vision but his school was inexperienced in PLCs and thus focused on mechanical use in its first year. In contrast, principals in both Schools B1 and B2 focused on a more narrow view of the state mandate, collaborative data use.

Our findings also indicated that PLC collaborations were more productive when principals engaged both individual teachers and teacher teams in decision making, required teachers to set goals for student performance, had them regularly report on their progress in meeting these goals to the entire faculty, and celebrated their successes. Principal A scheduled regular faculty meetings where PLCs shared student data, reported on the accomplishment of short-term goals, celebrated successes, and brainstormed why goals had not been reached. In the other three schools, PLCs set long-term goals, rarely reported on progress to each other except at the end of the schools year, and celebrated their successes only with other teachers.

Principals helped reinforce these expectations in their buildings by actively participating in grade level PLCs. In contrast to the other three principals, Principal A1 regularly attended PLC meetings, reinforcing the adage that “what gets monitored gets done.” Other principals acknowledged trying to attend PLC meetings regularly, but noted that the demands on their time were too great or that they did not want to intimidate the PLC’s work.

Principals also influenced PLC collaboration by creating school schedules that allowed PLCs to meet during the school day rather than only before or after school. Principals in both Schools A1 and A2 arranged the school schedule to meet the required state mandate of 90 min. weekly, 45 min. during the school day and 45 min. before or after school. The principals in Schools B1 and B2 were unable to build in PLC meeting time during the school day and PLCs met either before or after school and often did not meet the required weekly meeting time. The availability of meeting time during school hours (or lack of it) also helped signal the importance and development of the PLCs.

The provision of resources and support by the principal were particularly helpful. All of our districts had instructional specialists; some were based in school buildings full-time, others were assigned to the district office, but could be requested to spend time each week in specific school buildings. When instructional specialists regularly attended PLC meetings, the focus on using data to plan and shape instruction for individual or groups of students occurred more frequently. Instructional specialists did not facilitate or direct these PLC meetings; they attended as active, engaged members of the PLC. Instructional specialists most often helped interpret student data and/or suggested specific curriculum or instructional strategies to meet data-identified student needs. Their presence broadened or deepened the repertoire of the teachers present.

Principal efforts to nurture a school culture focused on high expectations, enhance teacher knowledge and skills, and provide resources influenced teachers’ ratings of shared norms, teacher trust, reflective dialog, deprivatized practice, collective responsibility, and shared leadership. Not surprisingly, we found higher ratings in School A1 than in the other three. All of these are essential in nurturing teacher collaboration that can improve instructional practice.

Conclusions and Implications

The research presented here examines the role of principals in the implementation of a state mandate for PLCs. Data from our small sample suggests that districts and schools complied with the state mandate and opportunities for teacher collaboration occurred though the nature and extent of collaboration varied significantly between schools. Our findings also suggest that mere compliance is not sufficient for achieving change in teacher instructional practices or ultimately student learning. Instead, we found that school principals played a pivotal role in creating the conditions necessary to support such changes in teacher practice.

However, our study was limited to a small sample of only four schools in two districts. One of our two districts had extensive experience with PLCs and thus began their response to the state mandate from a very different vantage point. We relied primarily on teacher self-reports as measures of collaborative work and these may not fully capture important aspects of practice. More work is needed to explore the role of principals in a broader sample of schools and districts, particularly without a state mandate for their existence. In addition, it was clear that the two districts in our sample influenced how the state mandate was implemented at the building level. Additional research is needed to explore the relationship between district and building leadership and how district leadership can support building leaders in implementing improvement efforts.

Nonetheless, our work informs the ongoing dialogue about the role of principal in supporting instructional reform. The Delaware state mandate build on the premise that changing teachers' routines related to collaborative data use and instructional planning will result in improvements in classroom instruction and student learning. Not only can principals influence the organizational context for these improvements, they can *directly* influence and constrain these routines, and thus act as key drivers of school improvement (Bryk et al., 2010; Duke, 1987; Marks & Printy, 2003, Portin et al, 2009; Talbert, 2010) and shifting a school's culture to emphasize teaching and learning (Hallinger, 2003). The evidence in our schools suggests that principals build and shape this new culture and routines by deciding who participates, when and how often, and what supports are available to assist teachers in making these changes in practice. Providing

regular collaboration meeting time, setting expectations for collaboration and data use, deprivatizing practice through sharing of data both horizontally and vertically, assigning instructional specialists to support PLCs, and regularly attending and monitoring PLC work are all important in principals' fostering changes in culture and routines. These actions align closely with other research on steps that principals can take to increase the success of improvement efforts (Leithwood & Jantzi, 1990).

Initiatives to use PLCs to leverage school improvement efforts are increasingly popular. We offer the following advice for those going forward.

1. Mandates and policies for PLCs can create opportunities for change, but by themselves, are insufficient to create meaningful reform and can result in uneven or inconsistent implementation. A key mechanism in the success of PLC mandates is ensuring that school leadership has sufficient knowledge of the reform to make decisions and take actions that effectively support PLC implementation. Investments in both information sharing and professional development for these leaders are essential.
2. School leaders need to translate state mandates and district vision of PLCs into clear expectations for their schools. School leaders should focus on setting high expectations for teacher and student learning, monitor their ongoing development, and hold teachers accountable for both.
3. School leaders potentially can wield direct influence scheduling time for collaboration, deciding who participates in these collaborations, assigning instructional specialists to work with groups of teachers, and actively participating in and monitoring collaborative work in a supportive capacity. These decisions can create opportunities for modeling and reinforcing the importance of collaborative work in leveraging improved instruction and increases in student learning.
4. District leadership is critical and should focus on communicating a consistent vision and expectations for improvement. This includes providing ongoing professional development for school and teacher leaders and actively monitoring school leaders' efforts in their individual schools. Central offices can also provide resources to all schools, such as access to instructional specialists.

References

- Association for Curriculum and Professional Development. (2009). Professional learning communities Series. Alexandria, VA: Author.
- Blase, J., & Kirby, P. C. (2000). *Bringing out the best in teachers: What effective principals do*. Thousand Oaks, CA: Corwin Press.
- Bryk, A. S., Sebring, P. B., Allensworth, E., Luppescu, S., & Easton, J. Q. (2010). *Organizing schools for improvement: Lessons from Chicago*. Chicago: University of Chicago Press.
- Bryk, A. S. & Schneider, B. L. (2002). *Trust in schools: A core resource for improvement*. New York, NY: Russell Sage Foundation.
- Authors,. (2012). *Professional learning communities: Implementation evidence from Delaware*. A paper presented at the Annual Meeting of the American Educational Research Association, Vancouver, CA.
- Clark, D. L. & Astuto, T. A. (1994). Redirecting reform: Challenges to popular assumptions about teachers and students. *Phi Delta Kappan*, 75, 513-520.
- Coburn, C. (2005). Shaping teacher sensemaking: School leaders and the enactment of reading policy. *Educational Policy*, 19(3), 476-509.
- Coburn, C. E., Russell, J. L., Kaufman, J. H., & Stein, M. K. (2012). Supporting sustainability: Teachers' advice networks and ambitious instructional reform. *American Journal of Education*, 119(1), 137-182.
- Copland, M. A. (2003). Leadership of inquiry: Building and sustaining capacity for school improvement. *Educational Evaluation & Policy Analysis*, 25(4), 375-395.
- Cosner, S. (2011a). Teacher learning, instructional considerations and principal communication: Lessons from a longitudinal study of collaborative data use by teachers. *Educational Management Administration & Leadership*, 39(5), 568-589.

- Cosner, S. (2011b). Supporting the initiation and early development of evidence-based grade-level collaboration in urban elementary schools: Key roles and strategies of principals and literacy coordinators. *Urban Education*, 46(4), 786-827.
- Cranston, J. (2009). Holding the reins of the professional learning community: Eight themes from research on principals' perceptions of professional learning communities. *Canadian Journal of Educational Administration and Policy*, <http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=EJ842519>
- DuFour, R. (2003, May). Building a professional learning community. *The School Administrator*.
- Dufour, R., Dufour, R., & Eaker, R. (2008). *Revisiting professional learning communities at work: New insights for improving schools*. Bloomington, IN: Solution Tree.
- Duke, D. L. (1987). *School leadership and instructional improvement*. New York: Random House.
- Elmore, R. F. (2000). *Building a new structure for school leadership*. Washington, D.C.: Albert Shanker Institute.
- Elmore, R. F., & Fuhrman, S. H. (2001). Holding schools accountable: Is it working? *Phi Delta Kappan*, 83(1), 67-70, 72.
- Elmore, R. F., Peterson, P. L., & McCarthy, S. J. (1996). *Restructuring in the classroom: Teaching, learning, & school organization*. San Francisco, CA: Jossey-Bass.
- Authors. (In press). Developing collaborative data use through professional learning communities: Evidence from Delaware. In A. J. Bowers, A. Shoho, & B. Barnett, *Using Data in Schools to Inform Leadership and Decision Making, International Research on School Leadership*
- Finnegan, K. (2010). Principal leadership and teacher motivation under high stakes accountability policies. *Leadership, and Policy in Schools*, 9(2), 161-189.
- Fullan, M. (2001). *Leading in a culture of change*. San Francisco, CA: Jossey-Bass.
- Gilley, A., Gilley, J. & McMillan, H. (2009). Organizational change: motivation, communication, and leadership effectiveness. *Performance Improvement Quarterly*, 21(4), 75-94.

- Goldring, E. & Pasternak, R. (1994). Principals' coordinating strategies and school effectiveness. *School effectiveness and school improvement*, 5, 239-253.
- Golding, E., Porter, A., Murphy, J., Elliott, S., & Cravens, X. (2007). *Assessing learning-centered leadership: Connections to research, professional standards, and current practices*. Accessed at <http://www.wallacefoundation.org/NR/rdonlyres/2D4629AE-6592-4Fdd-9206-D23A2B19EAC5/0/AssessingLearningCenteredLeadership.pdf>.
- Hallinger, P. (2003). Leading educational change: Reflections on the practice of instructional and transformational leadership. *Cambridge Journal of Education*, 33(3), 329-351.
- Hallinger, P., Bickman, L., & Davis, K. (1996). School context, principal leadership, and student reading achievement. *Elementary School Journal*, 96(5), 527-550.
- Hallinger, P. & Heck, R. H. (2010). Collaborative leadership and school improvement: Understanding the impact of school capacity and student learning. *School Leadership & Management*, 30(2), 95-110. Available at: <http://www.tandfonline.com/doi/abs/10.1080/13632431003663214>.
- Hallinger, P. & Murphy, J. (1987). Assessing and developing principal instructional leadership. *Educational Leadership*, 45(1), 54-62.
- Heck, R. H. (1992). Principals' instructional leadership and school performance: Implications for policy development. *Educational Evaluation & Policy Analysis*, 14(1), 27-34.
- Heck, R., Larson, T. J., & Marcoulides, G. A., (1990). Instructional leadership and school achievement: Validation of a causal model. *Education Administration Quarterly*, 26(2), 94-125.
- Hord, S. M. (1997). Professional learning communities: What are they and why are they important? *Issues...about Change*, 6(1), 1-8. Austin, TX: SEDL.
- Hoy, W. K. & Tschannen-Moran, M. (2003). The conceptualization and measurement of faculty trust in schools: The omnibus T-Scale. In W. K. Hoy & C. G. Miskel (Eds.), *Studies in leading and organizing schools* (pp. 181-208). Information Age Publishing: Greenwich: CT.

- Kruse, S. D., & Louis, K. S. (1993). *Developing professional communities in new and restructuring urban schools*. Paper presented at Annual Meeting of University Council on Educational Administration, Houston, TX.
- Kruse, S. D. & Louis, K. S. (2009). *Building strong school cultures: A guide to leading change*. Thousand Oaks, CA: Corwin Press.
- Kruse, S., Seashore Louis, K., & Bryk, A. (1994, Spring). Building professional community in schools. *Issues in Restructuring Schools*. Issue Report# 6, 3-6. Madison, WI: Center on Organization and Restructuring of Schools.
- http://www.wcer.wisc.edu/archive/core/issues_in_restructuring_schools/issues_no6_spring_1994.pdf.
- Kruse, S. D., Louis, K. S., & Bryk, A. S. (1995). An emerging framework for analyzing school-based professional community. In K. S. Louis & S. D. Kruse (Eds.), *Professionalism and Community Perspectives on Reforming Urban Schools*. Newbury Park: Corwin.
- Leithwood, K. & Jantzi, D. (1990). *Transformational leadership: How principals can help reform school cultures*. A paper presented at the Annual Meeting of the Canadian Association for Curriculum Studies, Victoria, British Columbia, Canada.
- <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED323622&site=ehost-live>.
- Leithwood, K., Jantzi, D., Silins, H. & Dart, B. (1993). Using the appraisal of school leaders as instruments for school restructuring. New York: Wallace Foundation.
- Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). *How leadership influences student learning*. New York: Wallace Foundation.
- Leithwood, K., & Montgomery, D. J. (1982). The role of the elementary principal in program improvement. *Review of Educational Research*, 52(3), 309-339.
- Lieberman, A., Saxl, E. R., & Miles, M. (1988). Teacher leadership: Ideology and practice. In A. Lieberman (Ed.) *Building a professional culture in schools*. New York: Teachers College Press.
- Little, J. W. (1990). The persistence of privacy: Autonomy and initiative in teachers' professional relations. *Teachers College Press*, 91(4) 509-536.

- Louis, K. S., Dretzke, B., & Wahlstrom, K. (2009). *How does leadership affect student achievement? Results from a national survey*. A paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- Louis, K. S., & Marks, H. (1998). Does professional learning community affect the classroom teachers' work and student experiences in restructured schools? *American Journal of Education*, 106(4), 532-575.
- Louis, K. S., Marks, H. M., & Kruse, S. (1996). Teachers' professional community in restructuring schools. *American Educational Research Journal*, 33(4), 757-798.
- Marks, H. M. & Printy, S. M. (2003). Principal leadership and school performance: An integration of transformational and instructional leadership. *Education Administration Quarterly*, 39(3), 370-397.
- May, H., & Supovitz, J.A. (2010). The scope of principal efforts to improve instruction. *Education Administration Quarterly*, 47(2), 332-352.
- McLaughlin, M. W., & Talbert, J. e. (2001). *Professional communities and the work of high school teaching*. Chicago: University of Chicago Press.
- McLaughlin, M. W. & Talbert, J. E. (2007). Building professional learning communities in high schools. In L. Stoll and K. S. Louis (Eds.), *Professional learning communities: Divergence, depth and dilemmas*. Columbus, OH: Open University Press.
- Melnick, S. A., & Witmer, J. T. (1999). *Team-based professional development: A new model for professional growth*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec.
- Miller, R. J., Goddard, Y. L., Goddard, R., Larsen, R., & Jacob, R. (2010). *Instructional leadership: A pathway to teacher collaboration and student achievement*. A paper presented at the 2010 annual meeting of the University Council for Educational Administration, New Orleans, LA.
- Murphy, J. (2002). Reculturing the profession of educational leadership: New blueprints. In J. Murphy (Ed.), *The educational leadership challenge: Redefining leadership for the 21st century*. NSSE Yearbook, 101(1), 65-82. Chicago: University of Chicago Press.

- Newmann, F.M. (1991). What is a restructured school? A framework to clarify means and ends. In K. Praeger, (Ed.), *Issues in Restructuring Schools*, Issue Report No. 1, Madison, WI: Center on Organization and Restructuring of Schools.
- Owens, R. G. (2001). *Organizational behavior in education: Instructional leadership and school reform*. (7th edition). Boston: Allyn and Bacon.
- Portin, B. S., Knapp, M. S., Dareff, S., Feldman, S., Russell, F. A., Samuelson, C., & Yeh, T. L. (2009). *Leadership for learning improvement in urban schools*. Seattle, WA: Center for the Study of Teaching and Policy, University of Washington.
- Purkey, S. C., & Smith, M. S. (1982). Highlights from research on effective schools. *Educational Leadership*, 40(3), 67.
- Reitzug, U. C. & West, D. L. (2011). A developmental framework for instructional leadership. In T. Townsend & J. MacBeath (Eds.), *International handbook of leadership for learning*. London: Springer, 165-185.
- Sebring, P. B., & Bryk, A. S. (2000). School leadership and the bottom line in Chicago. *Phi Delta Kappan*, 81(6), 440-443.
- Sheppard, B. (1966). Exploring the transformational nature of instructional leadership. *The Alberta Journal of Educational Research*, 42(4), 325-344.
- Sherer, J. Z., & Spillane, J. P. (2011). Constancy and change in work practice in schools: The role of organizational routines. *Teachers College Record*, 113(3), 661-657.
- Southern Regional Educational Board. (2012). Preparing all teachers to use proven, effective instructional methods across the curriculum. Atlanta: Author.
- Spillane, J. P. (2006). *Distributed leadership*. San Francisco, CA: Jossey Bass.
- Supovitz, J. A., & Poglinco, S. M. (2001). *Instructional leadership in standards-based reform*. Philadelphia: Consortium for Policy Research in Education.
- Supovitz J. (2002) Developing communities of instructional practice. *Teachers College Record*, 104(8), 1591-1626.

- Supovitz, J., Sirinides, P., & May, H. (2010). How principals and peers influence teaching and learning. *Education Administration Quarterly*, 46(1), 31-56.
- Talbert, J. E. (2010). Professional learning communities at the crossroads: How systems hinder or engender change. In A. Hargreaves, A. Lieberman, & M. Fullan, (Eds.), *Second International Handbook on Educational Change*. The Netherlands: Springer International.
- Tschannen-Moran, M. (2004). *Trust matters: Leadership of successful schools*. San Francisco, CA: Jossey-Bass.
- Waters, T., Marzano, R. J., & McNulty, B. (2003). *Balanced leadership: What 30 years of research tells us about the effect of leadership on student achievement*. Aurora, CO: Mid-Continent Research on Education and Learning.
- Witziers, B., Bosker, R. J., & Kruger, M.L. (2003). Educational leadership and student achievement: The elusive search for an association. *Education Administration Quarterly*, 39(3), 398-425.
- Wood, D. (2007). Teachers' learning communities: Catalyst for change or a new infrastructure for the status quo? *Teachers College Record*, 109(3), 699-739.

Table 1

Demographic and achievement profiles of school sites

School	A1	A2	B1	B2
Student Enrollment	730	717	531	474
White	57%	26%	18%	42%
Black	20%	10%	50%	17%
Hispanic	16%	58%	30%	37%
Low-SES	62%	81%	88%	68%
ELL	8%	42%	20%	26%
Special Education	11%	14%	12%	9%
Meeting/ exceeding math standard Spring 2010	91%	79%	69%	76%
Meeting/ exceeding reading standard Spring 2010	90%	78%	71%	74%

Note: Data accessed through school profiles on the Department of Education website:
<http://profiles.doe.k12.de.us/SchoolProfiles/State/Default.aspx>

Table 2

Summary of Results – Creating a Culture Focused on High Expectations for Student Learning

Variable	School			
	A1	A2	B1	B2
Purpose and History of PLCs	Experienced, PLCs as way to build teacher capacity	No experience, no clear statement about PLC purpose	Experienced, PLCs as way to build teacher capacity	Experienced, PLCs as way to empower teachers
Shared Leadership: Encourage wide participation in decision making, teacher role in decision making, input into pd plans, school teams have direct influence	Highest ratings for teacher involvement in decision making, Mean agreement on principal encourages wide participation=5.00, other means range from 4.68-4.98	Mixed ratings, mean agreement on principal encourages wide participation=3.25, other means range from 2.80-3.40	Mixed ratings, mean agreement on principal encourages wide participation=4.37, other means range from 4.18-4.37	Mixed ratings, mean agreement on principal encourages wide participation=4.03, other means range from 3.53 – 4.00
Setting Expectations for Data Use: To use data to guide conversation in PLCs, have clear guidelines on how to use data to guide conversations in PLC meetings	Highest ratings, ranking 1 st among 4 schools. Mean agreement on expectations=5.15, mean for guidelines using data=5.00	Moderate ratings, ranking 3 rd among 4 schools. Mean agreement on expectations=5.05; mean guidelines=4.09	Moderate ratings, ranking 2 nd among 4 schools. Mean agreement on expectations=5.17, mean guidelines=4.11	Moderate ratings, ranking 4 th among 4 schools. Mean agreement on expectations=4.52, mean guidelines=4.10
Monitoring: Attendance by principal or other administrator	Frequent and consistent attendance from administrator; 60% report comes to most/every mtg	Some attendance by administrator; 54.5% say comes, 40.9% say rarely	Little consistent involvement from administrator; 52.8% report attendance at some mtg & 36.1% reporting rarely	Little consistent involvement from administrator; 43.3% report attends some mtg and 40% rarely

Table 3

Summary of Results – Enhancing Teachers' Knowledge and Skills

Variable	School			
	A1	A2	B1	B2
Assistance in using data: Administrator has modeled data use, data or instructional coach worked with me, attended school-based pd on using data	High ratings, ranking 2 nd across 4 schools, item mean ratings range from 4.95-5.56	Moderately high ratings, 3 rd across 4 schools, item mean ratings range from 4.79-5.38	High ratings, ranking 1 st across 4 schools, item means range from 5.03-5.74	Moderate ratings, ranking 4 th among 4 schools, item mean ratings range from 4.12-4.56
Encouragement to use data: encourages	High ratings, ranking 1 st among	Moderate ratings, 4 th among 4	Moderately high ratings, 2 nd among	Moderate ratings, 3 rd among 4

data use to support effective teaching, creates opportunities for faculty to use data, provides plenty of training for data use, is a good example of an effective data user	4 schools, item mean ratings range from 4.95-5.53	schools, item mean ratings range from 4.00-4.84	4 schools, item mean ratings range from 4.49-5.16	schools, item mean ratings range from 4.26-5.16
Administrator visits to PLCs include help in data use	Moderate rating=4.70, 1 st among 4 schools	Modest rating=3.52, 4 th among 4 schools	Moderate rating=4.00, 2 nd among 4 schools	Modest rating=3.79, 3 rd among 4 schools

Table 4

Summary of Results – Allocating and Managing Resources

Variable	School			
	A1	A2	B1	B2
Meeting Schedule	Regular, consistent schedule, before and during school	Regular, consistent schedule, before and during school	Inconsistent schedule, after school	Regular frequency, varied length, after school
Instructional Coach Attendance at PLCs	Frequent and consistent attendance from instructional specialist; 53.8% report specialist at every mtg	Some attendance by instructional specialist; 27.2% report specialist at every/most mtg, 45.5% some mtg., 27.3% rarely	Little consistent involvement from instructional specialist; 10% report specialist at every mtg., 43.2% some mtg., 27% rarely; 18.9% never	Little consistent involvement from instructional specialist; 10% report specialist at every/most mtg, 30% some, 46.7% rarely, & 13.3% never
Instructional Coach Support in Using Data	Administrator/coach helps guide, Mean=4.7	Administrator/coach helps guide Mean=3.5	Administrator/coach helps guide, Mean=4.03	Administrator/coach helps guide, Mean=3.79
Sharing of Data Vertically and Horizontally	Strong - vertical/horizontal sharing	Sharing horizontal, not vertical	Weak on sharing in general	Sharing horizontal, not vertically

Table 5

Summary of Results – Development of Teacher Collaboration

Variable	School			
	A1	A2	B1	B2
Shared Norms: Share similar set of values related to teaching and learning, have well defined learning expectations for all students. assessment practices reflect curriculum standards	High ratings for shared norms across 4 schools, item mean ratings range from 5.28-5.58	Mixed ratings, ranking 4 th among 4 schools, item means range from 4.20-4.81	Mixed ratings, ranking 2 nd among 4 schools, item means range from 4.71-5.34	Mixed ratings, ranked 3 rd among 4 schools, item means range from 4.65-5.00
Trust: Trust each other, look out for each other, are open and have faith in integrity of colleagues	High ratings, ranking 1 st across 4 schools, item means above 5.20	Mixed ratings, ranking 4 th across 4 schools, item means around 4.00	Mixed ratings, ranking 2 nd across 4 schools, item means range from 4.76-4.89	Mixed ratings, ranking 3 rd almost always, item means range from 4.58-4.97
Shared Leadership: Encourage wide participation in decision making, teacher role in decision making, input into pd plans, school teams have direct influence	High ratings, ranking 1 st across 4 schools, for teacher involvement in decision making, Mean agreement on principal encourages wide participation=5.00, other means range from 4.68-4.98	Mixed ratings, ranking 4 th across 4 schools, mean agreement on principal encourages wide participation=3.25, other means range from 2.80-3.40	Mixed ratings, ranking 2 nd across 4 schools, mean agreement on principal encourages wide participation=4.37, other means range from 4.18-4.37	Mixed ratings, ranking 3 rd across 4 schools, mean agreement on principal encourages wide participation=4.03, other means range from 3.53 – 4.00
Collective Responsibility: Feel responsible to help each other improve instruction, take responsibility for improving school outside own class, help maintain discipline in school, not just classroom	High ratings, ranking 1 st across 4 schools, item means above 5.18	Mixed ratings, ranking 4 th across 4 schools, item means range from 3.66-4.58	Mixed ratings, ranking 3 rd across 4 schools, item mean ratings range from 4.05-4.89	Mixed ratings, ranking 2 nd across four schools, item means range from 4.31-5.00
Reflective Dialogue: Have conversations with colleagues about school goals, about what helps students learn best	High ratings, ranking 1 st across 4 schools, item means range 5.30-5.48	Moderate ratings, ranking 4 th across 4 schools, item means range 4.47-4.75	Moderately high ratings, ranking 2 nd across 4 schools, item means range 4.89-5.14	Moderately high ratings, ranking 2 nd across 4 schools, item means range 4.87-5.10
Deprivatized Practice: Invited someone in to help teach my class,	High ratings, ranking 1 st across 4 schools, all item means but 1 above	Mixed ratings, ranking 4 th across 4 schools, item means range from	Mixed ratings, ranking 2 nd across 4 schools, item means range from	Mixed ratings, ranking 3 rd across 4 schools, item means range from

colleagues observed my classroom, received meaningful feedback from colleagues, visited classrooms to observe instruction.	5.10	3.16-3.95	4.05-4.38	3.21-4.03
Collaborative Data Use: In conversations with specialists about teaching and learning in my classroom, with administrators about teaching and learning in my classroom, share or celebrate student success with other teachers	Moderately high ratings, ranking 1 st among 4 schools, item means range from 3.21-3.84	Moderate ratings, ranking 2 nd among 4 schools, item means range from 2.72-3.28	Moderate ratings, ranking 4 th among 4 schools, item means range from 2.42-2.78	Moderate ratings, ranking 3 rd among 4 schools, item means range from 2.48-3.13

Appendix A. *Description of Scale Items*

Scale and Items (6 point agreement scale)	Responses	Chronbach's Alpha	Mean	SD
Shared Norms (Kruse & Seashore-Louis, 1993) <ul style="list-style-type: none"> • Most teachers in our school share a similar set of values, beliefs, and attitudes related to teaching and learning. • In our school we have well defined learning expectations for all students. • Our student assessment practices reflect our curriculum standards. 	130	0.742	15.04	2.17
Teacher trust (Hoy & Tschannen-Moran, 2003) <ul style="list-style-type: none"> • Teachers in this school typically look out for each other. • Teachers in this school trust each other. • Teachers in this school are open with each other. • Teachers in this school have faith in the integrity of their colleagues. 	125	0.959	19.14	3.80
Reflective Dialogue (Kruse & Seashore-Louis, 1993) <ul style="list-style-type: none"> • Teachers have conversations with colleagues about the goals of this school. • Teachers have conversations with colleagues about what helps students learn best. 	127	0.884	10.14	1.48
Deprivatized Practice (Kruse & Seashore-Louis, 1993) <ul style="list-style-type: none"> • I have invited someone in to help teach my class(es). • I have had colleagues observe my classroom. • I have received meaningful feedback on my performance from colleagues. 	120	0.841	16.83	4.74

<ul style="list-style-type: none"> • I have visited other teachers' classrooms to observe instruction. 				
<p>Collective Responsibility (Kruse & Seashore-Louis, 1993)</p> <ul style="list-style-type: none"> • Teachers feel responsible to help each other improve their instruction. • Teachers take responsibility for improving the school outside their own class. • Teachers help maintain discipline in the entire school, not just their classroom. 	124	0.84	13.91	2.90
<p>Shared Leadership (Kruse & Seashore-Louis, 1993)</p> <ul style="list-style-type: none"> • Teachers have a role in school-wide decision making. • Teachers have input into plans for professional development and growth. • School's principal(s) ensures wide participation in decisions about school improvement. • School teams (departments, grade levels, other groups) have direct influence on school decisions. 	129	0.934	16.91	4.45
<p>Principal Leadership (Wayman, et al, 2009)</p> <ul style="list-style-type: none"> • My principal or assistant principal(s) encourages data use as a tool to support effective teaching. • My principal or assistant principal(s) creates many opportunities for the faculty to use data. • My principal or assistant principal(s) has made sure the faculty has plenty of training for data use. • My principal or assistant principal(s) is a good example of an effective data user. 	126	0.834	19.60	3.08