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How Teachers Experience Principal Leadership: The Roles of Professional Community, Trust, Efficacy, and Shared Responsibility

Kyla L. Wahlstrom
Karen Seashore Louis

Purpose: *The leadership of the principal is known to be a key factor in supporting student achievement, but how that leadership is experienced and instructionally enacted by teachers is much less clear. The purpose of this study was to examine various factors that are often present in principal–teacher interactions and teacher–teacher relationships to see how those may have an impact on teachers’ classroom instructional practices.*

Data Collection and Analysis: *Data for this quantitative study are from a teacher survey developed for the national research project, Learning from Leadership, funded by the Wallace Foundation. There are 4,165 completed surveys in the database, which reflects responses from teachers in grades K-12 in a sample of schools across the United States. Using a conceptual framework based on various known components of effective schools today, a stepwise linear regression examined the relationships among practices such as shared leadership and professional community with contextual variables such as trust and efficacy.*

Findings: *Three types of instructional behaviors—Standard Contemporary Practice, Focused Instruction, and Flexible Grouping Practices—emerged as strong factors which operationally described effective teacher practice. The presence of shared leadership and professional community explain much of the strength among the three instructional variables. Furthermore, the effect of teachers’ trust in the principal becomes less important when shared leadership and professional community are present. Self-efficacy strongly predicts Focused Instruction, but it has less predictive value for the other measures of instructional behavior. Individual teacher characteristics of gender and years of experience have clear impact on instructional practice, but there are no discernible patterns that suggest that the level of the principal (elementary vs. secondary) have more or less influence on teacher instructional behaviors.*

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Conclusions: *Increasing our knowledge about what leaders do and how they have an impact on the instructional behaviors of teachers will lead us to a better understanding of how leadership has a direct relationship to improved student achievement. These findings create a clearer picture of teacher–principal and teacher–teacher interactions that support learning and bring us closer to the elusive goal of clarifying the link between leadership and learning.*

Keywords: *leadership; trust; efficacy; professional community; shared leadership; instructional behavior*

Ask anyone who has had 1 or more years working in a school whether leadership has made a difference in their work and the answer will be an unhesitating “Yes.” No matter who the respondent is—teacher, custodian, education assistant, specialist, office support staff—they all seem to know good (and bad) leadership when they experience it. Furthermore, most people can identify particular behaviors of school leaders that they remember as being effective. For example, they may recall discrete events where they felt supported in working as a team or having a sense of freedom to challenge learners in new and exciting ways. Whatever the circumstances, the individual as part of a collective group working in a school has clear sensibilities about effective leadership when it happens. It is widely assumed that principals have both direct and indirect effects on teaching and student achievement, particularly with their structuring of teachers’ working conditions (Leithwood, Louis, Anderson, & Wahlstrom, 2004). It is the indirect effects that we explore in this article.

As an instructional leader in the building, the principal is expected to understand the tenets of quality instruction as well as have sufficient knowledge of the curriculum to know that appropriate content is being delivered to all students. This presumes that the principal is capable of providing constructive feedback to improve teaching or is able to design a system in which others provide this support. Research supports the increasing pressure on principals to deliver better instruction. Newmann, Smith, Allensworth, and Bryk (2001), for example, found that principals were key to instructional program coherence and the delivery of high-quality instruction in Chicago schools (p. 315). In the current era of accountability, a principal’s responsibility for the quality of teachers’ work is simply a fact of life. How to achieve influence over work settings (classrooms) in which they rarely participate is a key dilemma.

Increasing the visibility of classroom practice through frequent teacher observations of peers has been clearly linked to such benefits as improved instruction, improved teacher self-efficacy, and improved teacher attitudes toward professional development, among others (Frase, 2001; Louis &

Marks, 1998; Tschannen-Moran & Hoy, 2001; Yair, 2000). Other researchers have found similar outcomes for principals who are present in classrooms and who build instructional capacity through detailed feedback (Freedman, 2003; Fullan, 1995; Glickman, 2002). But this direct method requires the principal to be in many classrooms most days, which quickly becomes an unmanageable task in anything but rather small schools. Thus, a key issue for instructional leadership is whether there are indirect ways of enacting instructional leadership that will also affect classroom practice and, thus, student learning.

Pedagogical knowledge and skills provide the basic building blocks for instruction, but workplace factors also affect student learning. Among these are teachers' job satisfaction, a sense of professionalism and influence, collegial trust, and opportunities to collaborate. All of these influence how leadership is exercised in a school, but less is known about how principals contribute to them. One of the most frequently explored ways in which leaders can influence an organization's effectiveness is through creating a positive organizational environment (Hoy, Hannum, & Tschannen-Moran, 1998; Schein, 1992). Much has been written about characteristics of effective leaders as managers of culture and climate (Leithwood et al., 2004).¹ This article seeks to explore a subset of the culture/climate variables that may affect teachers' classroom practices, in particular the nature of relationships among adults in schools. In addition, we also examine how these conditions are affected by teachers' perceptions of the effects of principal leadership on their work.

LITERATURE REVIEW

The review of literature for this article focuses on the array of variables that may contribute to a school's culture and climate, including (a) those that principals can have some direct bearing on, such as principal-teacher relations, trust, and shared leadership; (b) variables over which they may have less influence, such as teacher-to-teacher relations in professional communities, and collective responsibility; and (c) factors over which the principal has indirect control, such as teachers' sense of personal efficacy and the quality of instruction.

Shared Leadership

For more than 30 years, reform proposals have recommended the inclusion of teachers in shared leadership roles. The effective schools initiatives

of the mid-1980s indirectly distributed some leadership tasks to teachers (Brookover et al., 1978; Clark, Lotto, & Astuto, 1984), whereas in the late 1980s and early 1990s, efforts to promote school-based management often included formal representation of teachers in decision making (although many investigations report weak implementation; Anderson, 1998; Malen, 1995). In recent policy discussions (e.g., the Education Commission of the States, the Council of Chief State School Officers, and teacher professional associations), there is broad support for expanding teachers' participation in leadership and decision-making tasks. These discussions are given additional weight by research suggesting that increased teacher influence in schools has the potential for significant positive effect on school improvement (Mayrowetz, Murphy, Louis, & Smylie, 2007; Mayrowetz & Smylie, 2004; Spillane, Halverson, & Diamond, 2004).

Still, what constitutes and promotes the distribution or sharing of leadership in a school is more ambiguous. Sharing leadership may have its greatest impact by reducing teacher isolation and increasing commitment to the common good (Pounder, 1999). Experiencing informal influence and feedback in the context of important professional discussions is an important ingredient that encourages a focus on shared practices and goals (Chrispeels, Castillo, & Brown, 2000; Chrispeels & Martin, 2002; Copeland, 2003; Spillane, 2003). On the other hand, research to date suggests that involvement in formal decision making or leadership roles may have limited impact on student achievement (Leithwood & Jantzi, 1999; Marks & Louis, 1997; Smylie, Conley, & Marks, 2002). For purposes of this article, shared leadership is defined broadly as teachers' influence over and participation in schoolwide decisions. This view of shared leadership reflects the emerging consensus among current scholars about those who are concerned with both formal and informal enactment of leadership roles.

How principals share leadership formally and informally is not well understood, although some authors like Peter Gronn have tried to capture its essence by looking at behaviors as varied as how principals talk, and the idea of having a "co-principalship" rather than the traditional principal/assistant principal model (Gronn, 2003; Gronn & Hamilton, 2004). However, when principals share leadership responsibilities with faculty members, they must also be ready to abide by actions initiated by teachers. Giving up control over key decisions becomes an increasingly high-stakes stance when the bottom line for accountability rests with the principal (Lyons & Algozzine, 2006). In addition, tentative principal-teacher efforts to share leadership are increasingly complicated by school districts' initiatives to involve teachers in leadership activities as well (Firestone & Martinez, 2007). One thing is clear in today's schools, however, that although the

system is designed as a hierarchical model where the responsibility for ensuring quality education rests at the “top” of the organization, there is increasing recognition everywhere that there is a need for more leadership from more people to get needed work done (Leithwood & Mascal, 2007).

Trust

Organizational trust has been examined in business and management settings for more than 30 years. An early study by Driscoll (1978) found that trust in the decision-making capacity of the organization’s leadership predicted overall satisfaction with the organization better than did employee participation in decision making. A more recent study examined changes in trust in work teams and found that perceived ability of colleagues was a strong predictor of trust and that trust was a significant predictor for risk-taking behaviors (Serva, Fuller, & Mayer, 2005).

Within the past 2 decades, studies of trust as a factor in school improvement have begun to illuminate the actions that leaders take which positively alter the culture in a school (e.g., Bryk & Schneider, 2003; Hoy & Sweetland, 2001; Louis, 2007; Tarter, Bliss, & Hoy, 1989; Tschannen-Moran, 2004). Tarter et al. (1989) found that supportive principal behavior and faculty trust were significantly correlated in their sample of secondary schools and that schools with higher levels of engaged teachers (including commitment to students) had higher levels of trust in colleagues. The study implies that principals can build trust indirectly through supportive behavior, but they cannot make teachers trust one another through direct action. Similarly, Bryk and Schneider’s (2003) study of Chicago elementary schools found that principal respect and personal regard for teachers, competence in core role responsibilities, and personal integrity were associated with relational trust among all adult members of the school. Louis (2007) identified similar principal behaviors that affect trust and linked trust to shared leadership. High-trust schools exhibited more collective decision making, with a greater likelihood that reform initiatives were widespread and with demonstrated improvements in student learning. Tschannen-Moran (2004) also outlined key leadership behaviors and specific actions that engender trust. For example, “Competence” is enacted by “engaging in problem solving, setting standards, buffering teachers, pressing for results” (p. 34).

Embedded in the notion of trust is the key distinction between the “trustee” and the “trustor” or, said another way, those having more or less power (or dependence) in a particular situation (Driscoll, 1978). Teachers’ views of trustworthy principals tend to be based on the leadership characteristics previously outlined. However, we have much less information about why principals do or do not trust their teachers.

Professional Community

Although we have focused thus far on shared leadership and principal–teacher trust, teacher–teacher relationships are even more important as a foundation for the way in which teachers work to improve instruction (Louis, 2006). Here we emphasize the importance of professional community, largely because of the accumulating evidence that it is related both to improved instruction and to student achievement (King & Newmann, 2001; Louis & Marks, 1998; Smylie & Wenzel, 2003; Tighe, Wang, & Foley, 2002).

Supportive interactions among teachers in schoolwide professional communities enable them to assume various roles with one another as mentor, mentee, coach, specialist, advisor, facilitator, and so on. However, professional community is more than just support; it includes shared values, a common focus on student learning, collaboration in the development of curriculum and instruction, the sharing of practices, and reflective dialogue (Kruse, Louis, & Bryk, 1995; see also Hord & Sommers, 2008; McLaughlin & Talbert, 2001). In a functioning professional community these elements are so deeply embedded that teachers are often not aware of them. For example, having reflective dialogue with colleagues or inviting a peer in to observe a lesson would be normal, desired, and expected (Little, 2003).

The findings of the several studies previously cited suggest that when the focus of the teachers' conversations is on the quality of student learning and collaborative work, teachers adopt pedagogical practices that enhance students' learning opportunities. Although many factors affect whether professional community will exist in a school, one of the most significant factors is strong principal leadership (Bryk, Camburn, & Louis, 1999; Louis & Marks, 1998; Youngs & King, 2002). In particular, studies find that principals play an important role in allocating time for teachers to meet and for providing increased opportunities for job-embedded professional development.

Professional community is closely associated with organizational learning, and the term *professional learning communities* has become common shorthand among practitioners. Professional community is also frequently associated with shared leadership. Teachers have to *learn* how to successfully interact and it requires initiatives from both teachers and principals to create conditions for rich dialogue about improvement. For example, allocated time and supportive school policies are critical to the formation of professional community, and both are influenced by the school's formal leadership. As opportunities for sustained collaboration are arranged by the administrative team, it enables the social construction of meaning and shared norms and values among teachers. Thus, the presence of professional

community appears to foster collective learning of new practices—when there is principal leadership (Marks, Louis, & Printy, 2000).

Teachers' Instructional Practices

There is consensus among scholars that classroom experiences have the greatest impact on whether students learn a lot or a little. In this article we are interested in leadership patterns, trust, and teacher–teacher relationships because they are often seen as levers to promote better instruction. What constitutes good instruction is, however, a question that has evolved over the last several decades but remains unresolved.

An early review of research (Brophy, 1986) found that certain behaviors of teachers, such as using academic objectives to establish learning expectations, effective classroom management strategies, and differentiated pacing of instruction based on both the content and the characteristics of the learners, were consistently associated with student achievement. From the late 1980s into the early years of 2000s, the emphasis shifted toward inquiry-based instructional models, in which the teacher's most important role was in designing lessons or learning experiences that involved guiding students toward new understanding through exploration and induction (Wiske, 1998). More recently, reviews have begun to re-emphasize the value of teacher-directed instruction (Kirschner, Sweller, & Clark, 2006). D. Cohen, Raudenbush, and Ball (2003) examined the differential use of resources for increasing student learning and suggested that teachers' instructional capabilities are a key resource, as instruction is the "cause" of learning. Added to this incomplete picture, however, is the limited amount of research that directly links policies and practices of leaders at the school level to high-quality instruction in the classroom, whether teacher directed or teacher guided.

In addition, in spite of the decades of research, there is also little agreement on a vocabulary or measures to describe teacher instruction, much less a set of practices that might constitute more or less useful teacher pedagogy. A particular problem is that the most valuable research strategies for observing instruction in widely varying settings (different disciplines, different grade levels) are short on details to guide teacher choices (see, e.g., Newmann, 1996). Measuring the complexity of classroom instruction is very difficult. As D. Cohen et al. (2003) noted, this is because teachers and students are independent and idiosyncratic actors. What happens instructionally in a given situation is context specific, making generalizable conclusions about reform efforts, such as shared leadership and developing professional community, difficult to confirm.

There are, however, some areas of limited agreement. One is that, although formal tracking of students is generally viewed as disadvantaging low income and less able students (Gamoran, 1987b), it is acknowledged that ability grouping for instructional purposes can have positive impacts under some conditions (E. Cohen, 1994). Grouping may be important because it provides students with opportunities for cooperative learning and may also be useful when teachers confront classrooms with great variability in student learning patterns. The issue is, of course, that the effects of student grouping are entirely dependent on the instructional practices of the teacher when she or he works with students in groups (Gamoran, 1987a). We use the term *flexible grouping* to describe this strategy as a distinct instructional behavior, as articulated by both Gamoran and Cohen.

Another area where there is increasing convergence is around the role of the teacher in creating learning opportunities. Rosenshine (1995) pointed to research that supports the significance of teaching that presents material in small steps linked with guided practice, uses questions to determine student understanding at many levels, including application outside of the classroom, and assists learners in developing cognitive strategies that enable them to perform higher level operations independently. What Rosenshine described, in other words, is teaching that focuses on directing students' attention toward a specific learning goal but ensuring, at the same time, that students have plenty of choices and interesting things to think about. We might call the approach that Rosenshine described as "Standard Contemporary Practice" because it is embedded in one form or another in most teacher education programs.

Although researchers rarely talk about mechanical "time on task" anymore, there is still accumulating evidence that teachers' efforts to control the timing and pacing of work in classrooms is important for student learning (Allington, 2001; Knapp, 1995; Taylor, Pearson, Clark, & Walpole, 2000), at least when it is carried out in the context of using rich materials and stimuli. Observations indicate that teachers spend a great deal of time on activities of limited value (test preparation or worksheets) or on "stuff" that is interesting but unconnected to learning goals (Knapp, 1995).

In our view, if we overlook teacher educator debates about the value of "direct instruction" versus "constructivist teaching" (Wilson & Peterson, 2006), these findings are compatible with current best practices that emphasize constructivist models of engaged student learning that are associated with student choices, "real-world" connections, dialogic environments in which students talk to each other as well as the teacher, and allowing students to figure out the meaning of the task for themselves—all of which are also associated with student achievement (Newmann, 1996). In this article, we

will use the term *focused instruction*, which combines the value of teacher-guided learning activities described by Kirschner et al. (2006) and the kind of exploration approach advocated by Wiske (1998). We do not view “focused instruction” as the same as the “scripted” instruction characterized by some contemporary curricula that provide high structure in both content and pedagogy and limited choice for both teachers and students.

Efficacy—A Moderating Variable?

Evidence indicates that teachers who believe in their ability to address the learning needs of students are more resilient in challenging situations and handle setbacks more readily (Ashton & Webb, 1986). They are also less likely to be critical of students who make errors, and they derive greater satisfaction from the job of teaching than their peers who have a more limited sense of control over their work (Raudenbush, Rowan, & Cheong, 1992). Therefore, as educational reforms are initiated in schools, feelings of efficacy may shape teachers’ willingness and preparedness to adopt reform strategies, including those that ask them to share practices with colleagues or take on more responsibility in the school.

Increasing attention is being drawn to the relationship between collective efficacy and student achievement (Bandura, 1993). Goddard and Goddard (2001), using a sample of teachers in a large urban district, found that individual self-efficacy of the teachers varied systematically among 47 elementary schools in that district but that a sense of collective efficacy at the school level explained much of the variation among individuals. A related concept that is emerging in the reform literature is “collective sense of responsibility.” Here the emphasis is on teachers’ belief that they not only have the capacity to influence student learning but the shared obligation to do so. Collective responsibility is often regarded as the outcome of collective efficacy. Lee, Dedrick, and Smith (1991), for example, found that standard measures of efficacy (“I can affect student learning”) were strongly related to measures indicating teachers’ feeling that school members should work hard to increase student achievement. The empirical and theoretical overlap between a collective sense of efficacy and collective responsibility has been affirmed in subsequent discussions (Bryk et al., 1999; Murphy, 2000). In this article we choose to look at collective sense of responsibility and moral obligation as indicators of collective efficacy.

Measuring teacher efficacy, whether individual or collective, has been fraught with difficulties and inconsistencies over the years, but establishing a relationship between leadership behavior and sense of efficacy strays into territory that is even less well established (Tschannen-Moran & Hoy, 2001,

p. 802). Because evidence exists that teachers' collective efficacy (or collective responsibility, depending on the study) can be a stronger predictor of student achievement than students' socioeconomic status (Bandura, 1993; Goddard, Hoy, & Woolfolk Hoy, 2000; Lee et al., 1991), there is an even greater need to describe what school leaders do to support collective efficacy among their faculty. In a study of 10 middle schools, Hipp (1996) found that principals affected efficacy by addressing in-school problems within their control, such as creating and supporting student discipline policies or enacting in-school structures for shared decision making.

The link between teacher efficacy and trust has not been explored in depth. Da Costa and Riordan (1996) examined the relationship between teachers' sense of efficacy and teachers' willingness to engage in collaborative relationships with colleagues and found a positive relationship. Although these results are limited by the study's small scale, they point to the need for further examination of how a sense of efficacy may support or inhibit a teacher's willingness to share their instructional practice.

Summary of Review

As noted in the beginning of this article, leadership in a school is a phenomenon that is both practiced and experienced. Our review suggests that leadership practices that share power are credited with creating greater motivation, increased trust and risk taking, and building a sense of community and efficacy among its members. However, peer relationships established among adults may have an equal or greater impact on classroom practice. Confounding the notion of schools as arenas of shared leadership for instruction is the hierarchical nature of school organizations that continues to permeate the perceptions and expectations that teachers and principals have about one another. At this point we still do not yet have a clear depiction of how leadership and teacher relationships interact and what effect, if any, those interactions may have as variables affecting instructional practices in schools. In particular, instructional behaviors that relate to "best practices" for targeted instruction and student cognition, as well as the use of flexible grouping strategies are all choices that teachers can make, based on what they know and what is encouraged in their schools.

An analytic framework derived from the review of the literature guides us in our examination of how teachers experience the leadership effects of the principal as they relate to instruction (see Figure 1). We assume that both principal-teacher relationships (indicated by trust and perceptions of shared leadership) and teacher-teacher relationships (indicated by sense of collective responsibility for student achievement and professional community)

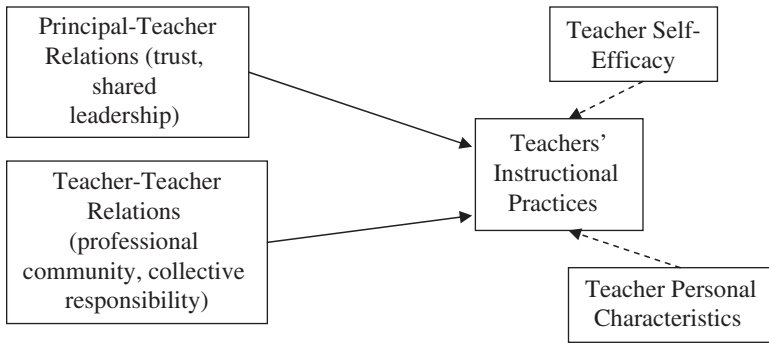


Figure 1. Framework for Analysis

will affect classroom practice. It is classroom instruction, after all, that is the nexus or focal point around which all reforms ultimately revolve, as instruction is the most direct link to student achievement. We do know much about the subcomponents identified in the boxes in the model. We know much less about how they interact to affect teachers' instructional practices. Thus, this article is about exploring the relationships between dimensions of organization and dimensions of classroom instruction.

Based on the issues identified in the literature, we address several questions:

1. How are teachers' instructional practices affected by principal-teacher relations, particularly in the efforts of the principal to share leadership with teachers, and by the teachers' trust in the principal?
2. How are teachers' instructional practices affected by teacher-to-teacher relations in a professional community, including their collective sense of responsibility?
3. How is the association between leadership and teacher-teacher relations affected by the teacher's individual sense of efficacy?

To exclude alternative explanations for our findings, we also include attention to several other factors that might affect classroom instruction, such as teacher's personal characteristics and school level. The latter variable was included because it is known to be associated with differences in instruction (Newmann, 1996), largely because the teacher cultures are so different among elementary, middle, and high schools (Firestone & Pennell, 1993; Hargreaves, 2002; Lee & Loeb, 2000). Both teacher characteristics and school level are shown in Figure 1 with dotted lines linked to teacher's instructional practices as they are potentially moderating variables.

METHODOLOGY

The data source for this analysis is the *Teacher Survey* developed for the Learning from Leadership research project. The larger project and the sampling strategy for schools and teachers are described in greater detail in the introductory article in this special issue. The *Teacher Survey* contains some items from established instruments as well as many new items and scales. The instrument was field-tested with teachers in 14 schools in a suburban district in Minnesota during December 2004 and January 2005. Researchers met with subgroups of teachers to review subsequent changes in the wording of the questions. The result was a 109-item survey, which takes about 10 to 15 min to complete.

The *Teacher Survey* documents were mailed to individual schools and were typically completed by all teachers during a school staff meeting. Each survey was accompanied by a blank envelope that could be sealed to ensure confidentiality so that none of the principals had access to the teachers' responses. Surveys were administered from February 2005 through November 2006. This article is based on surveys from 4,165 teachers in 39 districts in 138 schools, with a response rate of 67%.² All attitudinal variables used in this analysis were measured with 6-point Likert scales.

Variable Construction

Classroom practices. To address the questions just posed, we developed dependent variables (classroom practices) by factor analyzing 17 teaching practices (principal component analysis with varimax rotation). Three clear factors (eigenvalues over 1.0), accounted for 62% of the total variance, and factor scores were computed for each of these rotated components and were used as three separate dependent variables in our analyses. The results of the rotated analysis (Appendix A) indicate three distinct practice configurations, with loading being considered to be "high" when greater than .5:

- *Standard Contemporary Practice* (high loading on items such as "Students learn best when they are actively exploring new ideas, inventing, and trying out their own approaches to problem solving" and "It is important that students study real life problems that they are likely to encounter outside of the classroom" and "In order to learn complex material, students need information presented to them in several different ways."). This variable reflects Rosenshine's (1995) distinction between discovery-centered and teacher-centered practice and is consistent with the kind of instruction that Newmann and his colleagues found to be associated with student learning (Newmann, 1996). It also makes up the combination of instructional practices advocated in most teacher education programs in the United States.

- *Focused Instruction* included high loading on items such as “Disruptions of instructional time are minimized” and “I maintain a rapid pace of instruction in my classes,” but also a high loading on “My instructional strategies enable students to construct their own knowledge.” This set of loadings was unexpected but appears to reflect the teachers’ commitment to higher order learning combined with an emphasis on maintaining student engagement with very specific learning activities. It corresponds to the emphasis in the instructional literature on teacher’s responsibility for managing time in classrooms.
- *Flexible Grouping Practices* included high loading on items such as, “Student groupings in my class depend on my instructional purposes” and “I frequently group students according to different levels of academic ability.” This combination of items suggests a focus on organizing the classroom to differentiate instruction by teacher purpose. This variable relates to the ongoing discussion about how to make instruction more responsive in classrooms with students who are working at various levels, as well as the increasing emphasis on creating cooperative rather than individualized learning environments.

Factor scores were computed for each of these rotated components and were used as three separate dependent variables in our analyses. Because they are factor scores and thus orthogonal, a teacher could score low or high on each one.

Principal leadership behavior: Based on our literature review, two variables reflecting teachers’ perceptions of principal leadership behaviors were computed. In both cases, variables were selected that reflected the leadership behavior of concern—trust and sharing of leadership—and were subjected to a factor analysis to verify that they each constituted a single dimension.

- *Principal Trust* examines teachers’ trust in the principal. It included five survey items such as “The principal frequently discusses educational issues with you,” “The school’s principal(s) develop an atmosphere of caring and trust,” and “School’s principal(s) gives you individual support to help you improve your teaching practices.” The single significant factor that emerged accounted for 70% of the variance across the five items. A factor score was computed as a measure of each teacher’s perception of the principal as a trusted professional colleague.
- *Shared Leadership* included six items, such as “The department chairs/grade-level team leaders influence how money is spent in this school” and “Teachers have an effective role in school-wide decision making.” The single significant factor accounts for 51% of the variance in the six items. A factor score was computed and used as the indicator of shared leadership.

The loadings for the component matrix for these variables are shown in Appendices B and C.

Teacher's professional community. Four variables were developed to examine the nature of teacher's relationships with each other. These emerged from a factor analysis of items that measure professional community and were derived from previous instruments (Bryk et al., 1999; Lee & Smith, 1995; Louis & Marks, 1998). Four factors with eigenvalues greater than 1 emerged, each of which loaded on groups of items consistent with the literature. Factor scores were computed for each of these rotated components and were used as four separate dependent variables in our analyses:

- *Reflective Dialogue* loaded on five items such as "How often in this school year have you had conversations with colleagues about what helps students learn best?"
- *Collective Responsibility* loaded on three items, such as "How many teachers in this school feel responsible to help each other improve their instruction?"
- *Deprivatized Practice* loaded highly on four items, including "How often in this school year have you had colleagues observe your classroom?"
- *Shared Norms* loaded highly on five items, such as "Most teachers in our school share a similar set of values, beliefs, and attitudes related to teaching and learning" and "Teachers support the principal in enforcing school rules" (factor score $M = -.28$, $SD = 1.06$).

The loadings for the component matrix for teachers' professional community variables are shown in Appendix D.

Individual sense of efficacy/competence. This is a scale composed of four summed items, such as "I feel adequately equipped to handle student behavior in my class" and "I am able to monitor the progress of my students to my satisfaction." The Cronbach's alpha for the scale was .68 (scale $M = 20.39$, $SD = 3.34$).

Other characteristics. In addition to the variables that were the primary focus of our analysis, we believed that individual characteristics might also have a significant impact on classroom practices. We examine the effects of four individual characteristics:

- *Gender* (1 = female, 0 = male; 74% female)
- *Race* (1 = minority or mixed race, 0 = Caucasian; 77% White, non-Hispanic)
- *Professional age* (years of teaching; $M = 14$, $SD = 10$)
- *Type of school in which employed* (elementary, 37%); middle/junior high, 27%; high school, 36%)

Data Analysis and Results

To address our questions, we used stepwise linear regression models. In each case the dependent variable was one of the three instructional practice variables—Standard Contemporary Practice, Focused Instruction, or Flexible Grouping Practices. On the first step, we entered the two leadership behavior variables (Principal Trust and Shared Leadership), followed in the second step by the four teacher professional relationship variables (Reflective Dialogue, Collective Responsibility, Deprivatized Practice, and Shared Norms), and finally the individual characteristics (race, gender, years of teaching, and individual efficacy/competence) as moderating variables. Because we were also interested in the way in which school level (elementary, middle, and high school) affects the influence of leadership on teacher classroom practices, we conducted separate analyses (nine additional regressions) for each of the elementary/middle/high school subpopulations.

Contemporary classroom practice. Table 1 presents the results of the regression of Standard Contemporary Practice on the independent variables. The first step, in which the two leadership variables are entered, suggests a modest effect: Both variables achieve significant regression coefficients, but only about 3% of the variance in Standard Contemporary Practice is explained. The second step, which adds the four variables measuring teachers' professional community, suggests that they also have a significant effect on the classroom. The R^2 increases to .065, and all of the added variables are significant. Principal Trust is no longer significant in this equation, but Shared Leadership continues to be significant. The final step, in which individual characteristics are added, also increases the R^2 to .089. Race is not significant in its effect, and Individual Sense of Efficacy is significant only at the .03 level. Being female and working in the school for fewer years both contribute. The coefficient for Principal Trust continues to be not significant, whereas the coefficient for Shared Leadership is also of modest significance at the .03 level.

To summarize these findings briefly: Teachers' Professional Community, particularly Reflective Dialogue, Deprivatized Practice, and Shared Norms, have a robust effect on what we have called Standard Contemporary Practice—the type of classroom behavior that reflects a focus on student exploration and connection to the real world, and these effects are only modestly changed with the introduction of individual characteristics. Although teachers' experience of Shared Leadership is significant, it appears to be less important. Both Collective Sense of Responsibility/Efficacy and Individual Sense of Efficacy also contribute, but again to a lesser degree. (See Appendix E for a correlation matrix of these results.)³

TABLE 1
Regression of Standard Contemporary Practice on Leadership, Professional Community and Individual Variables

<i>Predictors</i>	β	<i>t</i>	<i>Sig.</i>	<i>R</i> ²
1 (Constant)		.281	.778	
Trust	.078	3.251	.001	
Shared Leadership	.113	4.772	.000	
<i>F</i> = .55.74***				.031
2 (Constant)		.180	.857	
Trust	.000	-.011	.991	
Shared Leadership	.055	2.243	.025	
Reflective Dialogue	.144	8.173	.000	
Collective Responsibility	.046	2.473	.013	
Deprivatized Practice	.099	5.489	.000	
Shared Norms	.129	5.634	.000	
ΔF = 26.7***				.065
3 (Constant)		-3.753	.000	
Trust	.005	.218	.828	
Shared Leadership	.052	2.118	.034	
Reflective Dialogue	.111	6.239	.000	
Collective Responsibility	.047	2.513	.012	
Deprivatized Practice	.090	5.141	.000	
Shared Norms	.100	4.846	.000	
Race	.005	.267	.790	
Gender	.135	7.758	.000	
Years Worked in School	-.077	-4.491	.000	
Efficacy/Competence	.040	2.178	.030	
ΔF = 19.73***				.089

*** $p \leq .001$.

When we examine whether these results are different, depending on whether the teacher is located in an elementary, middle or high school, we find some, but not a great deal, of variation (Table 2). Trust in Principal Leadership and in Shared Leadership are insignificant in all three contexts. The Professional Community/Teacher Relations variables have consistently larger standardized regression coefficients in elementary schools than in the upper grade schools. Only in high schools is Individual Efficacy/Competence significant. However, overall, the differences are less sharp than the consistencies. One exception to this generalization is in the Collective Sense of Responsibility/Efficacy variable, which has a relatively high standardized

TABLE 2
Regression of Standard Contemporary Practice on Leadership, Professional Community and Individual Variables for Teachers at Three School Levels

	<i>Elementary Teachers^a</i>			<i>Middle School Teachers^b</i>			<i>High School Teachers^c</i>		
	β	<i>t</i>	<i>Sig.</i>	β	<i>t</i>	<i>Sig.</i>	β	<i>t</i>	<i>Sig.</i>
(Constant)		-.596	.551		-1.683	.093		-3.666	.000
Trust	-.059	-1.446	.149	.039	.855	.393	.023	.542	.588
Shared Leadership	.077	1.844	.065	.080	1.808	.071	.030	.712	.477
Reflective Dialogue	.115	3.905	.000	.163	4.875	.000	.070	2.251	.025
Collective Responsibility	.109	3.460	.001	-.011	-.298	.766	.012	.390	.697
Deprivatized Practice	.107	3.650	.000	.060	1.825	.068	.092	3.035	.002
Shared Norms	.133	3.923	.000	.066	1.662	.097	.068	1.913	.056
Race	-.036	-1.287	.198	.038	1.200	.231	.010	.336	.737
Gender	.073	2.573	.010	.146	4.454	.000	.113	3.787	.000
Years worked in school	-.057	-1.980	.048	-.106	-3.290	.001	-.073	-2.456	.014
Efficacy/Competence	.009	.292	.770	.022	.643	.520	.088	2.735	.006
R^2			.072			.108			.063

a. $N = 1,231$.

b. $N = 904$.

c. $N = 1,118$.

regression coefficient among the elementary population, but not in the middle or high school populations.

Focused Instruction. The results of the regressions of Focused Instruction practices on leadership, professional community and individual characteristics are presented in Table 3. In contrast to the Standard Contemporary Practices regression discussed previously, a clear result is that in each of the three models a much higher percentage of the variance is explained. The two leadership variables, both of which have standardized regression coefficients of over .2, achieve an R^2 of .14; adding the teacher-teacher relationship variables increases the R^2 to .20, with Shared Norms, in particular, exhibiting a large standardized regression coefficient ($\beta = .29$). Deprivatized Practice is the only variable in the second model that is not significant at the .05 level.

Adding individual characteristics in model three increases the R^2 to .40, with a particularly powerful effect associated with Efficacy/Competence ($\beta = .48$). Adding the individual variables also reduces the importance of Reflective Dialogue among teachers to an insignificant level, but both leadership variables, and Collective Sense of Responsibility and Shared Norms remain significant.

TABLE 3
**Regression of Focused Instructional Practice on Leadership, Professional
 Community and Individual Variables**

<i>Predictors</i>	β	<i>t</i>	<i>Sig.</i>	<i>R</i> ²
1 (Constant)		.871	.384	
Trust	.183	8.097	.000	
Shared Leadership	.221	9.799	.000	.138
<i>F</i> = 245.42***				
2 (Constant)		.645	.519	
Trust	.079	3.436	.001	
Shared Leadership	.128	5.604	.000	
Reflective Dialogue	.048	2.958	.003	
Collective Responsibility	.096	5.528	.000	
Deprivatized Practice	.017	1.044	.297	
Shared Norms	.292	15.884	.000	.202
$\Delta F = .64.16^{***}$				
3 (Constant)		-29.994	.000	
Trust	.044	2.183	.029	
Shared Leadership	.094	4.693	.000	
Reflective Dialogue	.016	1.121	.262	
Collective Responsibility	.067	4.417	.000	
Deprivatized Practice	.013	.898	.369	
Shared Norms	.153	9.077	.000	
Race	-.011	-7.786	.432	
Gender	-.022	-1.582	.114	
Years worked in school	-.031	-2.235	.026	
Efficacy/Competence	.483	32.166	.000	.400
$\Delta F = 250.03^{***}$				

*** $p \leq .001$.

Briefly, the equation results suggest that leadership behavior has a stronger effect on teachers' use of classroom strategies that are designed to keep the emphasis on pacing of instruction and academic learning and that these are reinforced by agreement about responsibility for student success and consistency about basic school values governing instruction and behavior. Collective sense of responsibility/efficacy and, to an even greater extent, individual sense of efficacy contribute to classroom practices that are teacher centered and focused on direct instruction.

Table 4 presents the results of similar regressions for teachers in different settings. The results again suggest some similarities. Leadership has a

TABLE 4
Regression of Focused Instruction Practice on Leadership, Professional Community and Individual Variables for Teachers at Three School Levels

	<i>Elementary Teachers^a</i>			<i>Middle School Teachers^b</i>			<i>High School Teachers^c</i>		
	β	<i>t</i>	<i>Sig.</i>	β	<i>t</i>	<i>Sig.</i>	β	<i>t</i>	<i>Sig.</i>
(Constant)		-19.59	.000		-16.376	.000		-15.668	.000
Trust	.027	.856	.392	.096	2.537	.011	.038	1.113	.266
Shared Leadership	.070	2.136	.033	.055	1.511	.131	.124	3.614	.000
Reflective Dialogue	.083	3.603	.000	-.030	-1.110	.267	.002	.082	.935
Collective Responsibility	.102	4.166	.000	.054	1.856	.064	.063	2.464	.014
Deprivatized Practice	.015	.638	.523	.006	.226	.821	.021	.854	.394
Shared Norms	.164	6.237	.000	.150	4.608	.000	.157	5.454	.000
Race	.001	.041	.968	-.024	-.919	.358	-.026	-1.083	.279
Gender	-.013	-.579	.562	-.040	-1.481	.139	.014	.573	.567
Years worked in school	-.039	-1.762	.078	-.034	-1.306	.192	-.026	-1.063	.288
Efficacy/Competence	.512	21.349	.000	.484	16.890	.000	.451	17.265	.000
R ²			.435			.402			.384

a. *N* = 1,231.
 b. *N* = 904.
 c. *N* = 1,118.

significant effect in all settings: Shared Leadership variables are significant in both elementary and high school settings, (although Shared Leadership appears to be more much more important in high schools than in elementary schools) and Trust in Principal Leadership is significant in middle schools. Shared Norms and Collective Responsibility are significant or nearly significant at all three levels, whereas Deprivatized Practice is unimportant in all three. Reflective Dialogue, on the other hand, is very important in elementary schools and is not significant in either middle or high schools. As in the combined data set, Individual Sense of Efficacy/Competence is the most important predictor of Focused Instructional practice, with β coefficients of .45 or greater in all three contexts.

Flexible Grouping Practices. In the first model regressing Flexible Grouping Practices on leadership variables, both Instructional Leadership and Shared Leadership are significant, with an *R*² of .04 (Table 5). Adding the Teacher Professional Community variables doubled the *R*² to .086 but reduced the size of the standardized regression coefficients for both the leadership variables such that both are insignificant. All of the teacher–teacher variables are significant in this model.

TABLE 5
Regression of Flexible Grouping Practice on Leadership, Professional Community and Individual Variables

<i>Predictors</i>	β	<i>t</i>	<i>Sig.</i>	<i>R</i> ²
1 (Constant)		-.024	.981	
Trust	.104	4.362	.000	
Shared Leadership	.119	5.006	.000	.042
<i>F</i> = 72.87***				
2 (Constant)		-.127	.899	
Trust	.017	.702	.483	
Shared Leadership	.046	1.870	.062	
Reflective Dialogue	.073	4.177	.000	
Collective Responsibility	.074	3.996	.000	
Deprivatized Practice	.177	10.152	.000	
Shared Norms	.152	7.705	.000	.086
ΔF = 34.50***				
3 (Constant)		-9.611	.000	
Trust	.017	.686	.493	
Shared Leadership	.035	1.451	.147	
Reflective Dialogue	.029	1.634	.102	
Collective Responsibility	.069	3.798	.000	
Deprivatized Practice	.163	9.503	.000	
Shared Norms	.093	4.591	.000	
Race	.048	2.914	.004	
Gender	.148	8.678	.000	
Years worked in school	-.086	-5.104	.000	
Efficacy/Competence	.144	7.958	.000	.129
ΔF = 37.73***				

*** $p \leq .001$.

The final model, which adds individual characteristics, raises the R^2 to .125. All of the Teacher Professional Community variables remain significant, and all of the individual characteristics also contribute significantly. Individual Sense of Efficacy/Competence is significant, but the associated beta (.14) is no larger than other individual variables (being female and having deprivatized practice experiences with other adults in the school).

Table 6, which presents regressions on Flexible Grouping Practices for each of the three school settings, again shows greater similarities than differences. In none of the equations are Shared Leadership or Trust in Principal Leadership important predictors, and in all settings Deprivatized Practice and Individual Efficacy/Competence have the largest beta. In addition, newer

TABLE 6
Regression of Flexible Grouping Practice on Leadership, Professional Community
and Individual Variables for Teachers at Three School Levels

	<i>Elementary Teachers^a</i>			<i>Middle School Teachers^b</i>			<i>High School Teachers^c</i>		
	<i>β</i>	<i>t</i>	<i>Sig.</i>	<i>β</i>	<i>t</i>	<i>Sig.</i>	<i>β</i>	<i>t</i>	<i>Sig.</i>
(Constant)		-6.426	.000		-5.132	.000		-5.852	.000
Trust	-.012	-.300	.764	-.003	-.076	.940	.047	1.144	.253
Shared Leadership	-.019	-.457	.648	.077	1.748	.081	.066	1.579	.115
Reflective Dialogue	.061	2.091	.037	.026	.774	.439	-.007	-.213	.832
Collective Responsibility	.026	.827	.408	.055	1.535	.125	.033	1.053	.293
Deprivatized Practice	.141	4.910	.000	.156	4.758	.000	.152	5.117	.000
Shared Norms	.081	2.445	.015	.038	.966	.334	.025	.722	.470
Race	.056	2.025	.043	.031	.964	.335	.044	1.494	.135
Gender	.103	3.686	.000	.106	3.251	.001	.083	2.823	.005
Years worked in school	-.065	-2.299	.022	-.153	-4.763	.000	-.063	-2.129	.033
Efficacy/Competence	.210	6.926	.000	.148	4.237	.000	.144	4.528	.000
<i>R</i> ²			.105			.115			.088

a. *N* = 1,231.

b. *N* = 904.

c. *N* = 1,118.

teachers and women are more likely to use Flexible Grouping Practices in all settings. The only clear difference is that Reflective Dialogue is significant for elementary school teachers but not for middle or high school teachers.

SUMMARY OF FINDINGS

Our investigation was stimulated by three research questions: How are teachers' instructional practices affected by (a) principal leadership behaviors, (b) teacher-teacher relationships, and (c) individual sense of efficacy, and do other individual characteristics such as race, years of experience, and gender moderate these effects? Each of these is discussed next.

Leadership and Instruction

The school reform literature has consistently suggested that creating effective schools requires that principals become instructional leaders (Camburn, Rowan, & Taylor, 2003). To carry out this function, they should

be visibly involved in instructional work; should create a sense of trust such that teachers are willing to discuss instructional issues with them during formal and informal supervision; and, because they cannot be everywhere and be expert in all aspects of instructional practice, must share responsibility with others in the school.

Our findings indicate that the effects of principal leadership on instruction are relatively weak in the case for two of the instructional practice factors: Standard Contemporary Practice and Flexible Grouping Practices. In contrast, teachers' perceptions of principal leadership have a rather clear and consistent effect on the degree to which teachers engage in teaching practices that emphasize Focused Instruction—rapid pacing and focus, combined with student discovery and teacher-guided instruction. This model of teaching, which is arguably poorly reflected in many of the current debates about alternative instructional models, appears to be reinforced by an environment within the school in which both teacher–principal relationships are salient and in which teachers perceive the broad net of influence among all members that is described by Spillane et al. (2004).

Overall, a notable finding is the relative role of shared leadership and trust. As noted in the literature review, existing research suggests more support for the importance of trust than for shared leadership. Our findings suggest that expanding the decision-making arenas in schools to include nonadministrators is an important step that leaders can take in long-term efforts to improve instruction and affirms the recent work of Marks and Printy (2003). Increasing teachers' levels of trust in administrators—a somewhat “softer” leadership goal—may have positive effects on a school's climate but may be a less direct way of improving classroom practice.

The set of tables in which the equations are disaggregated by school level suggests some need to expand the discussion of what constitutes instructional leadership. Although it is frequently argued that secondary school principals can't be responsible for instruction because they don't carry content knowledge in all disciplines, elementary school principals are also challenged in their efforts to exert leadership over instructional practice. Our data suggest that elementary, middle, and high school principals can all have a significant effect on instruction. There are a few findings that suggest that different behaviors may be more important in one setting than another (principal–teacher trust is more important in middle schools when the dependent variable is focused instruction; shared leadership is more important in high schools), and we need more information about the specific things that principals do to share leadership and create trust, because we know that leadership may often look different in secondary and elementary schools (Southworth, 2002).

Teacher–Teacher Relationships and Instruction

Professional Community and its more contemporary sibling, Professional Learning Community, have been hot topics on the professional development and teacher practice circuits for nearly a decade. Although there is evidence linking the concept to improved classroom instruction (Marks & Louis, 1997), many publications that promote improving teacher–teacher relationships as a strategy for school reform are based largely on anecdotal evidence and/or a few case studies. As Little (2003) suggested, professional communities are not all alike, and not all of them lead to the kind of change that principals desire.

Our findings suggest that professional community adds a great deal to the explanation of all three instructional practice variables but that not all teacher behaviors have the same effect on instruction:

- Reflective Dialogue, as evidenced by opportunities to discuss practice with other teachers, seems to be particularly important in predicting Standard Contemporary Practice. Perhaps this is because the vocabulary for describing the behaviors that comprise Standard Contemporary Practice—connections between subject matter and the real world, presenting key concepts in multiple ways, and asking students to explain their answers—are already accepted as appropriate practices by teachers who have attended almost any professional development activity related to instructional improvement.
- Having shared norms about teaching and assessment are particularly strong predictors of Focused Instruction. This may be the case because only when teachers agree on effective pedagogy is it possible to raise questions about how to eliminate extraneous activities that might distract them from concentrating on what they believe to be most important (Allington, 2001).
- Deprivatized practice, or the opportunity to see other people teaching, is most critical in determining the use of Flexible Grouping Practices. This is, perhaps, not surprising because teachers rarely have the opportunity to actually see how other teachers use groups. Other than attending a workshop on cooperative learning, most teachers have not been exposed to the ways in which groups may be used to facilitate instruction, nor do they always understand how to use groups for varied purposes.

The variable contribution of some elements of professional community to each of the instructional practice outcomes is consistent across elementary, middle, and high schools.

We anticipated, based on previous research, that Collective Sense of Responsibility (which we argued earlier is an indicator of collective efficacy) would have more powerful effects than it does. Because our measure focused on teachers helping fellow teachers to improve practice and on teacher involvement in creating a better instructional environment in a school, we

anticipated that it would provide a strong link to instruction. Although it is significant in all of the equations, it is not among the most important predictors in any equation. This finding stands in contrast to research previously cited that shows stronger links between collective sense of efficacy and school outcomes than individual efficacy. The relationship between collective responsibility (collective efficacy) and classroom practices deserves, in our view, further exploration.

Individual Characteristics and Instruction

Individual characteristics, with the exception of race, have an impact on instructional practice, but these effects vary depending on the dimension of instruction. Individual Sense of Efficacy has no significant relationship to Standard Contemporary practice, has modest effects on Instructional Grouping, and has a significant effect on Focused Instruction that outshadows all other predictors. We can only assume that one's individual sense of efficacy is precisely what Bandura has always claimed—that it is highly volatile in its response to particular contexts. Where the context includes the expectation that the teacher keep the classroom simultaneously focused, on task, and devoted to learning by having students construct their own knowledge, a level of confidence in one's own expertise is apparently paramount. Standard Contemporary Practices, on the other hand, has elements that are familiar to all teachers, whether they choose them as the basis for their classroom planning and activities (as newer and female teachers are more likely to do according to our findings) or not.

Overall, the roles of gender and experience raise some important questions: If male teachers and less experienced teachers are less likely to score high on any of the instructional practices that are measured in the three variables, what else might they be doing in their classrooms if they are effective instructors? Or are they simply more "honest" in rating their delivery of the kind of instruction that many teachers would like to see themselves carry out? Exploring some of these issues requires classroom observation data, which we explore in later articles.

DISCUSSION AND CONCLUSION

In sharing our findings, we also wish to acknowledge the limitations of our study. In particular, surveys are only a proximate measure of our key dependent variable, instructional practice. Anyone who has experienced

examining classrooms knows that there is a disjuncture between teachers' aspirations and what they actually do when they are in front of students, although they are associated (Mayer, 1999). In addition, we are not measuring actual principal behaviors but only teachers' perceptions of how their principals behave. Finally, we have chosen to limit this article to the analysis of individual teacher responses, although a number of the constructs that we are discussing could be analyzed at both the individual level and as organizational characteristics. In spite of these (and other) limitations, we have thrown some light on the three questions that we posed earlier.

In this final section we "begin with the end in mind," namely, that the assumptions embodied in our research that increasing the mutual trust and influence among adults in the school, whether they are leaders or peers, will improve instructional practices and, thus, student learning. Our three instructional practices are variable and, because they are factor scores, are independent: A teacher could score low or high on one or more. Thus, we think of each of the regressions as reflecting not differences in type (some teachers are "Focused Instructors," whereas others are "Grouping Practitioners") but rather as three indicators of deepened instructional expertise and intensity. In light of this assumption, where are some of the surprises that are worthy of additional reflection?

Trust, which a substantial body of research suggests is an important feature of school improvement and student achievement, is clearly less important than we anticipated and is a significant predictor in only one Model 3 equation (the regression of Focused Instruction on the middle school teacher sample, Table 4). We were particularly surprised by this finding because our measure of trust included items that measured the principal's role in providing both direct and indirect support for instruction. Why does trusting the principal on instructional matters not lead to stronger or more intense instructional practices of any of the three types that we have examined?

We suspect that this may be the case because trust in the principal by the teacher is often a diffuse element of the school's environment; the principal may be perceived as caring about and supportive of good instruction but may still not have much to say about the deliberate strategic choices that teachers make when designing or changing classroom practice. In other words, trust in the principal's instructional support seems to reflect a passive rather than an active form of leadership. As Tschannen-Moran's (2004) work on trust implies, creating trust among teachers, which happens within professional communities, may be more significant in stimulating changes in practice than does having a trusting relationship with the principal. This does not mean that trust in leaders is unimportant, because a trusted leader is a foundation for

creating other forms of trust, and it allows the school to manage its critical human resources more effectively (Tschannen-Moran, 2004, p. 198).

Shared leadership in making school decisions, on the other hand, emerges as somewhat more important in determining instructional practice. Perhaps sharing decision-making responsibility among a broader group of stakeholders creates legitimacy for collective decisions about instructional priorities; perhaps it also reinforces norms of professional community, binding teachers together in the strategic decisions that teachers face when they design and adjust their classroom practice. What these results also suggest is that when the power differential between principals and teachers is lessened, instruction is positively affected. Because this study reinforces the recent findings of the Marks and Printy (2003) study, which used a smaller and less representative sample of schools, we suggest that the relationship between shared leadership and other leadership behaviors, as they relate to improving instruction, should be further explicated.

We point to the importance of looking at our measures of shared leadership: We have included both formal teacher leadership roles and more informal forms of influence, including teachers' perceptions of their students' influence on school decisions. However, all of the items tap *school-level decision making* rather than the generalized web of *influence over classroom practice and tasks* that is suggested by Spillane, Halverson, and Diamond's (2001) distributed leadership framework. In other words, our finding suggests that when teachers are involved in making decisions that affect them, they tend to strengthen or deepen their instructional practice. This is consistent with Marks and Louis's (1997) conclusions about the impact of teacher empowerment on classrooms and with Marks and Printy's (2003) conclusion that, when instructional leadership is shared among the teachers *and* with the principal, the influence of the combined efforts on the quality of pedagogy is significant.

The professional community variables, on the other hand, are centered on the sharing of teacher knowledge about practice rather than on decision making. When teachers share ideas about practice, discuss them, or demonstrate them regularly, they may have decreased dependence on their principal as a direct source of expert knowledge. This lessened dependence may help to account for the diminished impact of trust in leadership when we take the level of professional community into account. In other words, perhaps only where professional community is weak do teachers look to the principal for direct instructional support. Again, this finding does not suggest that principals are unimportant, only that their work in schools may be one of quiet support rather than bold, visibly transformational action.

The finding that different professional community variables emerge as central for the three instructional practice models adds to our understanding of how teacher–teacher relationships lead to school improvement. Most studies of professional community do not look at separate subconstructs but use a composite scale. We, however, find that Reflective Dialogue and Shared Norms and Values strengthen Standard Contemporary Practice. Shared Norms and Collective Sense of Responsibility undergird Focused Instructional Practice, and Deprivatized Practice, or opportunities to observe and discuss specific instructional strengths and weaknesses, leads to more use of deliberative and varied grouping. These differences affirm Little’s (2003) contention, based on two case studies, that we need to go further inside teams and teacher collaboratives to get a better understanding of what happens when teachers work together around instruction.

Of the three classroom practices variables studied, Standard Contemporary Practices and Flexible Grouping Practices are about general classroom instructional strategies, where Focused Instruction is about maintaining a focus on individual learners using targeted instructional language and specifically considered learning activities. Although this article has not examined how these three function simultaneously in a teacher’s repertoire, it is worth noting that the use of instructional time is the most amenable to direct principal leadership influence. Having an effect on the microchoices that teachers make as they adjust their teaching throughout the day to bring in examples that make the “real world” more apparent in the material and how teachers change the grouping of students to address different skill sets are difficult for the principal to actually observe and understand because they require the specific knowledge that teachers have about the children as learners in their classrooms. The focused use of time and pacing, on the other hand, is relatively easy to see, and both older and newer models of principal supervision assume that time is important. Thus, it is perhaps not surprising that this, of the three instructional variables, is most affected by Trust and Shared Leadership.

Future Research

The next phase of inquiry with the existing database will be to associate student performance data on achievement tests with teacher and principal responses by school and to use interview and observation data to understand how teacher and principal leadership affect efforts to improve student experiences in classrooms. If strong relationships are present among the variables from the study reported here with increases in student achievement over

time, then we might have “prima facie” evidence that shared leadership and professional community, for example, are absolutely necessary conditions for effective instructional environments. Also, further investigation of teacher relationships within their own context may lead us to more fully understand how shared leadership and professional community can be more or less resilient in the presence of changes in leadership. This may be particularly useful information, as principals are increasingly transferred into and out of schools. Our results suggest that when the power differential between principals and teachers is lessened, instruction is positively affected.

In the end, teachers still have ultimate control over how they spend their time with their students. Understanding how leaders may influence those private choices will be the key to linking effective leadership with quality instruction.

Appendix A Classroom Practices Component Matrix

<i>Survey Item</i>	<i>Component Factor Loading</i>		
	<i>Standard Contemporary Practice</i>	<i>Focused Instruction</i>	<i>Grouping Strategies</i>
3-1 Teachers should prompt students to explain and justify their ideas to others (teachers and peers).	.529	.180	.048
3-2 Students learn best when they are actively involved in exploring ideas, inventing, and trying out their own approaches to problem-solving.	.758	.144	.026
3-3 In order to learn complex material, students need information presented to them in several different ways.	.754	.099	.045
3-4 If students can't apply what they learn to the real world, they don't really understand it.	.683	-.004	.081
3-5 It is important that students study real life problems that they are likely to encounter outside of the classroom.	.779	.037	.073
3-6 I regularly incorporate student interests into lessons.	.599	.208	.157
3-7 Students should help establish criteria on which their work will be assessed.	.552	.109	.158

(continued)

Appendix A (continued)

<i>Survey Item</i>	<i>Component Factor Loading</i>		
	<i>Standard Contemporary Practice</i>	<i>Focused Instruction</i>	<i>Grouping Strategies</i>
1-8 I am able to monitor the progress of all my students to my satisfaction.	.024	.573	.277
1-11 My instructional strategies enable students to construct their own knowledge.	.271	.613	.166
1-12 I maintain a rapid pace of instruction in my classes.	.070	.642	-.035
2-1 Disruptions of instructional time are minimized.	.063	.552	.177
3-8 Most students in my class are capable of taking charge of their own learning in age-appropriate ways.	.176	.657	-.032
1-4 I frequently group students according to different levels of academic ability.	.121	-.055	.799
1-9 Student groupings in my class depend on student need.	.123	.211	.802
1-14 Student groupings in my class depend on my instructional purposes.	.134	.310	.557
Alpha statistic for bold items	.79	.62	.61

NOTE: Values in bold are the actual survey items that create each factor.

**Appendix B
Component Matrix Trusting Relationships Between
Teacher and Principal**

<i>Survey Item</i>	<i>Component Factor Loading</i>
2-25 I discuss instructional issues with my principal(s).	.739
4-5 School's principal(s) gives you individual support to help you improve your teaching practices.	.858
4-7 School's principal(s) models a high level of professional practice.	.864
4-8 School's principal(s) develops an atmosphere of caring and trust.	.879
4-10 School's principal(s) encourages collaborative work among staff.	.844
Alpha statistic	.87

NOTE: Extraction method: Principal component analysis. One component extracted.

Appendix C

Component Matrix Shared Leadership Among Principal and Others

<i>Survey Item</i>	<i>Component Factor Loading</i>
2-3 The department chairs/grade-level team leaders influence how money is spent in this school.	.583
2-5 Teachers have an effective role in school-wide decision making.	.821
2-19 Teachers have significant input into plans for professional development and growth.	.731
4-11 School's principal(s) ensures wide participation in decisions about school improvement.	.782
4-21 How much direct influence do students have on school decisions?	.576
4-24 How much direct influence do school teams (depts., grade levels, other teacher groups) have on school decisions?	.739
Alpha statistic	.78

NOTE: Extraction method: Principal component analysis. One component extracted.

Appendix D

Teacher's Professional Relationships Component Matrix

<i>Survey Item</i>	<i>Component Factor Loading</i>			
	<i>Reflective Dialogue</i>	<i>Collective Responsibility</i>	<i>Deprivatized Practice</i>	<i>Shared Norms</i>
3-24 How often in this school year have you exchanged suggestions for curriculum materials with colleagues?	.708	.060	.176	.193
3-25 How often in this school year have you had conversations with colleagues about the goals of this school?	.795	.146	.111	.063
3-26 How often in this school year have you had conversations with colleagues about development of new curriculum?	.765	.087	.104	.037
3-27 How often in this school year have you had conversations with colleagues about managing classroom behavior?	.728	.089	.135	.021

(continued)

Appendix D (continued)

Survey Item	Component Factor Loading			
	Reflective Dialogue	Collective Responsibility	Deprivatized Practice	Shared Norms
3-28 How often in this school year have you had conversations with colleagues about what helps students learn best?	.798	.162	.218	.083
3-16 How many teachers in this school feel responsible to help each other improve their instruction?	.207	.817	.170	.148
3-17 How many teachers in this school take responsibility for improving the school outside their own class?	.157	.880	.112	.154
3-18 How many teachers in this school help maintain discipline in the entire school, not just their classroom?	.112	.794	.053	.284
3-20 How often in this school year have you invited someone in to help teach your class(es)?	.112	.057	.654	.000
3-21 How often in this school year have you had colleagues observe your classroom?	.125	.065	.848	.053
3-22 How often in this school year have you received meaningful feedback on your performance from colleagues?	.244	.166	.738	.075
3-23 How often in this school year have you visited other teachers' classrooms to observe instruction?	.153	.039	.757	.050
2-4 Most teachers in our school share a similar set of values, beliefs, and attitudes related to teaching and learning.	.046	.473	.027	.551
2-8 In our school we have well defined learning expectations for all students.	.066	.192	.087	.819
2-11 Our student assessment practices reflect our curriculum standards.	.137	.087	.021	.803
3-15 Teachers support the principal in enforcing school rules.	.092	.432	.052	.543
Alpha statistic for bold items	.87	.85	.80	.76

NOTE: Extraction method: Principal component analysis. Rotation method: Varimax with Kaiser normalization. Values in bold are the actual survey items that create each factor.

Appendix E Correlation Matrix

	1	2	3	4	5	6	7	8	9
1. Standard Contemporary Practice									
Pearson correlation	1	.000	.000	.158*	.067*	.099*	.149*	.167*	.145*
Sig. (two-tailed)		1.000	1.000	.000	.000	.000	.000	.000	.000
N	3,778	3,778	3,778	3,547	3,547	3,547	3,547	3,538	3,702
2. Focused Instruction									
Pearson correlation		1	.000	.080*	.159*	.058*	.380*	.352*	.336*
Sig. (two-tailed)		1.000	1.000	.000	.000	.001	.000	.000	.000
N	3,778	3,778	3,778	3,547	3,547	3,547	3,547	3,538	3,702
3. Grouping Practices									
Pearson correlation			1	.077*	.094*	.182*	.184*	.175*	.177*
Sig. (two-tailed)			1.000	.000	.000	.000	.000	.000	.000
N	3,778	3,778	3,778	3,547	3,547	3,547	3,547	3,538	3,702
4. Reflective Dialogue Factor									
Pearson correlation				1	.000	.000	.000	.192*	.186*
Sig. (two-tailed)				1.000	1.000	1.000	1.000	.000	.000
N	3,547	3,547	3,547	3,814	3,814	3,814	3,814	3,576	3,736
5. Collective Responsibility Factor									
Pearson correlation					1	.000	.000	.328*	.293*
Sig. (two-tailed)					1.000	1.000	1.000	.000	.000
N	3,547	3,547	3,547	3,814	3,814	3,814	3,814	3,576	3,736

(continued)

Appendix E (continued)

	1	2	3	4	5	6	7	8	9
6. Deprivatized Practice Factor									
Pearson correlation	.099*	.058*	.182*	.000	.000	1	.000	.188*	.200*
Sig. (two-tailed)	.000	.001	.000	1.000	1.000		1.000	.000	.000
N	3,547	3,547	3,547	3,814	3,814	3,814	3,814	3,576	3,736
7. Shared Norms Factor									
Pearson correlation	.149*	.380*	.184*	.000	.000	.000	1	.434*	.418*
Sig. (two-tailed)	.000	.000	.000	1.000	1.000	1.000		.000	.000
N	3,547	3,547	3,547	3,814	3,814	3,814	3,814	3,576	3,736
8. Shared Leadership									
Pearson correlation	.167*	.352*	.175*	.192*	.328*	.188*	.434*	1	.734*
Sig. (two-tailed)	.000	.000	.000	.000	.000	.000	.000		.000
N	3,538	3,538	3,538	3,576	3,576	3,576	3,576	3,809	3,753
9. Teacher-Principal Trust									
Pearson correlation	.145*	.336*	.177*	.186*	.293*	.200*	.418*	.734*	1
Sig. (two-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	
N	3,702	3,702	3,702	3,736	3,736	3,736	3,736	3,753	4,016

*Correlation is significant at the $p = .01$ level (two-tailed).

NOTES

1. Note that although some scholars debate about differences between culture and climate, there is much overlap between the two concepts and, because their differences are not the focus of this article, we ignore efforts to distinguish between them.

2. Note that we cannot accurately compute response rates at the school level because we do not know how many teachers actually attended the staff meeting during which the survey was distributed. In addition, most of the staff lists did not allow us to determine whether the teacher was part time or full time in the school. The estimated overall response rate is, thus, probably on the low side.

3. The authors are happy to provide additional statistical data upon request.

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