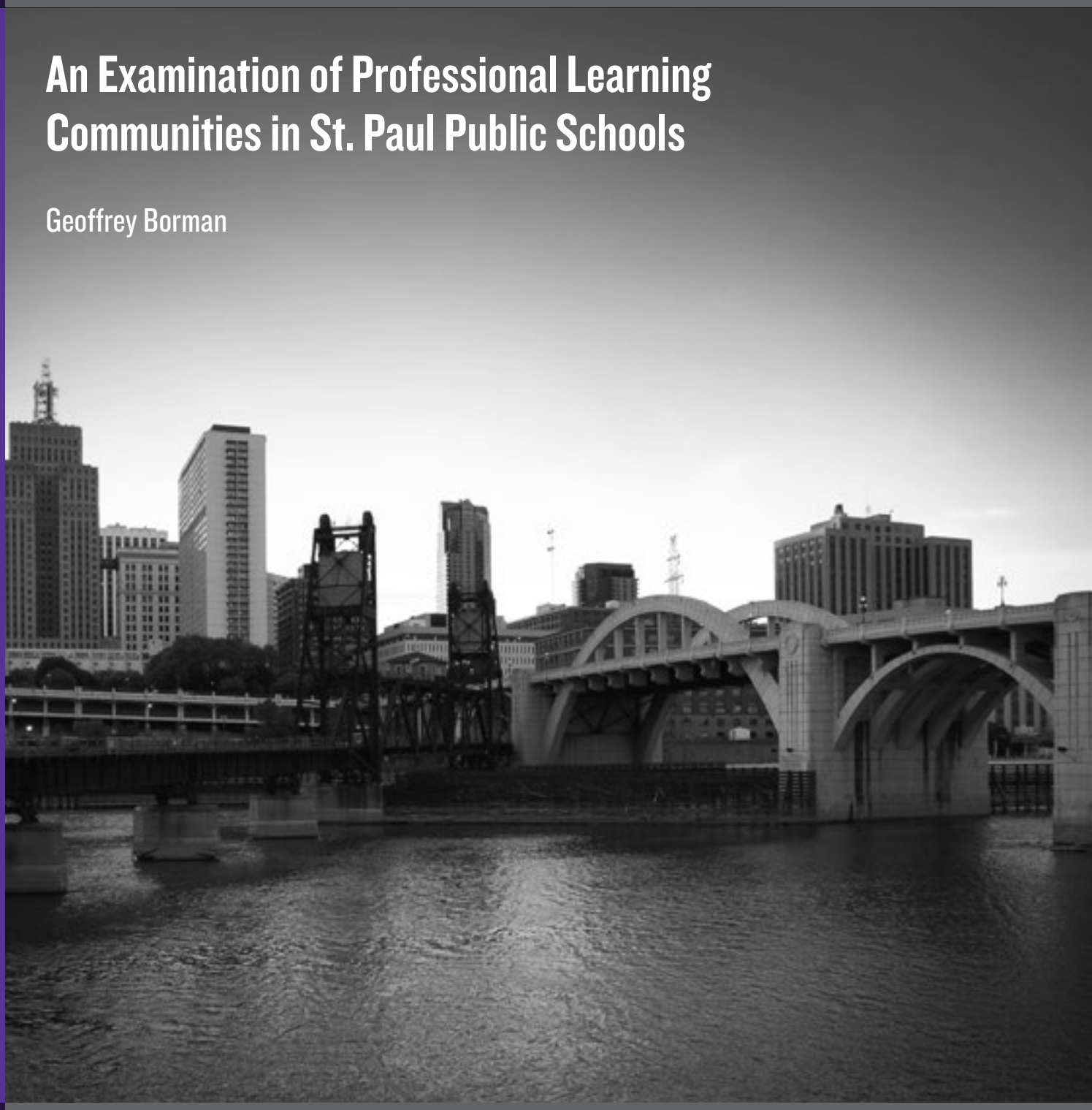
THE SENIOR URBAN EDUCATION RESEARCH FELLOWSHIP SERIES

An Examination of Professional Learning Communities in St. Paul Public Schools

Geoffrey Borman



Council of the Great City Schools

VOLUME VIII
FALL 2012
THE COUNCIL OF THE GREAT CITY SCHOOLS

The Council of the Great City Schools thanks the Institute of Education Sciences (IES) for supporting the Senior Urban Education Research Fellowship Program.

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The Senior Urban Education Research Fellowship Series

Volume VIII:

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Fall 2012

The Council of the Great City Schools is the only national organization exclusively representing the needs of urban public schools. Founded in 1956 and incorporated in 1961, the Council is located in Washington, D. C. , where it works to promote urban education through legislation, research, media relations, instruction, management, technology, and other special projects.

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THE SENIOR URBAN EDUCATION RESEARCH FELLOWSHIP PROGRAM

Large urban public school districts play a significant role in the American education system. The largest 67 urban school systems in the country – comprising less than one half of one percent of the nearly seventeen thousand school districts that exist across the United States – educate about 14 percent of the nation's K-12 public school students, including over 20 percent of the nation's economically disadvantaged students, 28 percent of its African American students, about a quarter of its Hispanic students, and a quarter of its English Language Learners. Clearly, any attempt to improve achievement and to reduce racial and economic achievement gaps across the United States must involve these school districts as a major focus of action.

These school districts face a number of serious, systematic challenges. To better understand the problems in urban education and to develop more effective and sustainable solutions, urban districts need a program of rigorous scientific inquiry focusing on what works to improve academic outcomes in the urban context. Moreover, in order to produce such evidence and to move public education forward generally, the standards of evidence in education research must be raised in such a way as to bring questions regarding the effectiveness of educational interventions and strategies to the fore and to promote careful scrutiny and rigorous analysis of the causal inferences surrounding attempts to answer them.

It has been argued that, in order to move such an effort forward, a community of researchers, committed to a set of principles regarding evidentiary standards, must be developed and nurtured. We contend further that, in order to produce a base of scientific knowledge that is both rigorously derived and directly relevant to improving achievement in urban school districts, this community of inquiry must be expanded to include both scholars and practitioners in urban education.

Though a great deal of education research is produced every year, there is a genuine dearth of knowledge regarding how to address some of the fundamental challenges urban school districts face in educating children, working to close achievement gaps, and meeting the demands of the public for better results. Moreover, while there is a history of process-related research around issues affecting urban schools, relatively few studies carefully identify key program components, document implementation efforts, and examine the effects of well-designed interventions in important programmatic areas on key student outcomes such as academic achievement. In sum, there is an absence of methodologically sound, policy-relevant research to help guide practice by identifying the conditions, resources, and necessary steps for effectively mounting initiatives to raise student achievement.

In order to address this need, the Council of the Great City Schools, through a grant from the Institute of Education Sciences, established the Senior Urban Education Research Fellowship (SUERF) program.

The Senior Urban Education Research Fellowship was designed to facilitate partnerships between scholars and practitioners focused on producing research that is both rigorous in nature and relevant to the specific challenges facing large urban school districts. We believe such partnerships have the potential to produce better, more practically useful research in at least three ways. First, by deepening researchers' understanding of the contexts within which they are working, the program may help them maximize the impact of their work in the places where it is needed the most. Second, by helping senior staff in urban districts become better consumers of research, we hope to increase the extent to which the available evidence is used to inform policy and practice, and the extent to which urban districts continue to invest in research. Third, by executing well-designed studies aimed at the key challenges identified by the districts themselves, we hope to produce reliable evidence and practical guidance that can help improve student achievement.

The primary goals for the Senior Urban Education Research Fellowship are to:

- promote high quality scientific inquiry into the questions and challenges facing urban school districts;
- facilitate and encourage collaboration, communication, and ongoing partnerships between senior researchers and leaders in urban school districts;
- demonstrate how collaboration between scholars and urban districts can generate reliable results and enrich both research and practice;
- produce a set of high quality studies that yield practical guidance for urban school districts;
- contribute to an ongoing discussion regarding research priorities in urban education; and
- promote the development of a "community of inquiry", including researchers and practitioners alike, committed to both a set of norms and principles regarding standards of evidence and a set of priorities for relevant, applied research in urban education.

The SUERF program benefitted greatly from the guidance and support of a Research Advisory Committee made up of experts and leaders from large urban school districts and the education research community. The committee included Dr. Katherine Blasik, Dr. Carol Johnson, Dr. Kent McGuire, Dr. Richard Murnane, Dr. Andrew Porter, and Dr. Melissa Roderick. This extraordinary group helped to identify and define the objectives and structure of the fellowship program, and we thank them for lending their considerable insight and expertise to this endeavor.

The following volume of the *Senior Urban Education Research Fellowship Series* documents the work of Dr. Geoffrey Borman working in collaboration with the St. Paul Public Schools. Both the research and reporting is the sole intellectual property of Dr. Borman, and reflects his personal experience and perspective.

Dr. Borman's report aims to examine the effects of a leading strategy for school reorganization and reform—Professional Learning Communities—on student achievement. What he found, however, was that mounting an evaluation effort after a reform has taken hold in a district often limits our ability to identify and document the full impact. This is a critical message for district leaders and staff. As we pursue reform, we need to be mindful of building evaluation strategies into our plans from the very beginning so that we have a way of gauging effectiveness. As urban education leaders, we need to know what programs and strategies benefit our students, and what needs to be adjusted in real time or replaced with a new approach. Education researchers and practitioners alike have much to gain from knowing what works—and why.

We hope you will find this report both interesting and relevant to your own work in education.

Thank you.

Michael Casserly
Executive Director
Council of the Great City Schools

ABOUT THE SENIOR URBAN EDUCATION RESEARCH FELLOW

Trained as a quantitative methodologist at the University of Chicago, Dr. Borman (Ph. D. , 1997) is a Professor of Education and Sociology at the University of Wisconsin—Madison, the Co-Director of the University of Wisconsin's Predoctoral Interdisciplinary Research Training Program, and a Senior Researcher with the Consortium for Policy Research in Education. Professor Borman's main substantive research interests revolve around the social distribution of the outcomes of schooling and the ways in which policies and practices can help address and overcome educational inequality. His primary methodological interests include the synthesis of research evidence, the design of quasi-experimental and experimental studies of educational innovations, and the specification of school-effects models.

Over the past ten years, Borman has led or co-directed twelve major randomized controlled trials, which have included randomization and delivery of educational interventions at the student, classroom, school, and district levels. He has conducted three recent research syntheses, including a meta-analysis of the achievement effects of 29 nationally disseminated school reform models. Finally, other recent projects reveal the consequences of attending high-poverty schools and living in high-poverty neighborhoods and uncover some of the mechanisms through which social-context effects may be manifested.

Professor Borman has been appointed as a methodological expert to advise many national research and development projects, including the National Research Center on the Gifted and Talented and three of the nation's regional educational laboratories funded by the Institute of Education Sciences. He was also named to the 15-member Urban Education Research Task Force established to advise the U. S. Department of Education on issues affecting urban education. Borman serves on the editorial boards of seven academic journals, including the *American Educational Research Journal, Reading Research Quarterly,* and *Elementary School Journal.* His research has been funded by a variety of organizations, including the National Science Foundation, U. S. Department of Education, Office of Educational Research and Improvement, Institute of Education Sciences, American Educational Research Association Grants Program, Spencer Foundation, Open Society Institute, and Smith-Richardson Foundation, among others. Dr. Borman was the recipient of a 2002 National Academy of Education/Spencer Postdoctoral Fellowship Award, the 2004 Raymond Cattell Early Career Award from the American Educational Research Association, the 2004 American Educational Research Association Review of Research Award, and the 2008 American Educational Research Association Palmer O. Johnson Award. In 2009, Dr. Borman's significant contributions to the field of education research were recognized by his nomination and selection as a Fellow of the American Educational Research Association.

ABOUT THE RESEARCH PARTNERSHIP

This work builds on prior successful collaborations between Professor Geoffrey D. Borman of the University of Wisconsin—Madison and the St. Paul Public Schools (SPPS) that have involved quasi-experimental and experimental evaluations of science magnet programs operating within the district. We have productively designed and implemented the quasi-experiment and randomized controlled trials and have completed both of the three-year evaluations. With the Senior Urban Education Research Fellowship, Dr. Borman and the leadership from the SPPS saw an opportunity to continue and extend this fruitful partnership.

The partnership between Professor Borman and SPPS addressed key methodological and substantive concerns within the district (and within most urban districts across the United States). The two key methodological issues are: (1) how to design high-quality quasi-experimental evaluations of already-existing policies and practices that are being implemented across the district; and (2) how to implement randomized controlled trials to evaluate and inform new policies and practices as they are being rolled out. From a substantive perspective, the projects focus on: (1) how to build teacher effectiveness and school-level capacity to improve student achievement; and (2) how to design new initiatives to help narrow existing achievement gaps between historically underserved students and their more privileged peers. These methodological and substantive shaped the interactions among Professor Borman and the curriculum and instruction and evaluation experts within the district. Beyond the two-year Fellowship, the experience should also build an enduring model of a proactive research process by which school district administrators can design evaluations to inform decision-making.

The Fellowship offered Dr. Borman the opportunity to gain new insights into the research needs of urban districts and provided the SPPS with improved empirical understandings of the impacts of its reform efforts. No matter how technically sound research activities might be, though, if they do not address the issues and questions that are of concern to education policymakers and practitioners, the research will not be used to inform education policy and practice. Professor Borman's role in working with the SPPS has been to work with the district leadership to identify the most pressing issues in need of evaluation, to develop rigorous research designs that fit the realities of the district context, and to develop information from the studies that is relevant and responsive to the stakeholders' initial questions and concerns. As Coburn, Honig, and Stein's (2006) lessons for increasing districts' data use suggest, two crucial factors include collaboration with external organizations and partners that can facilitate access to the "right evidence" and developing structures or processes to fund and support the search for evidence. The Fellowship provided the structured opportunity and resources necessary to bring both rigor and relevance to SPPS's most pressing questions. Two of the most important issues raised by evaluators, curriculum and instruction specialists, and other district leaders in the SPPS are related to (1) building teacher effectiveness and school capacity to improve achievement, and (2) closing achievement gaps. This report addresses the first of these two central policy issues.

EXECUTIVE SUMMARY

Professional learning communities, or PLCs, are a leading education reform strategy currently being pursued in schools and districts across the country. PLCs are "organic" models of school organization that offer a departure from the more hierarchical and siloed approach of traditional K-12 educational settings, and are generally defined by five main elements:

1) Shared Norms and Values;
2) Collective Focus on Student Learning;
3) Collaboration;
4) Deprivatized Practice; and
5) Reflective Dialogue.

The general theory supporting the appropriateness of these "organic" models of school organization, along with the theory and "practical wisdom" of the PLC model, seem to offer some promise for school improvement. Yet the existing evidence supporting the effects of PLCs on enhancing teachers' professional development, instructional effectiveness, and, in turn, their students' achievement is quite modest. There are promising anecdotal and correlational results, but there have been no rigorous quasi-experiments or experiments of PLCs that are known.

This study aimed to examine the impact of PLCs in St. Paul Public Schools (SPPS). Specifically, we sought to answer the questions:

1) What teacher characteristics predict PLC participation across the seven SPPS high schools? Who participates?
2) What is the "value-added" of PLC participation on student achievement outcomes? Do teachers who report stronger participation in PLCs achieve greater achievement gains for their students?

Using results from the Learning Community Culture Indicator (LCCI)—a survey that the SPPS has administered to measure the level at which a school may be functioning with respect to eight common elements of PLCs—we linked teachers' survey response data to other teacher information (e.g., years of experience, gender, and age), the classes they taught (e.g., algebra, science, English), the PLC to which they belonged, and the students they taught within each class, along with the students' demographics and test scores (e.g., eligibility for free lunch, gender, race/ethnicity, prior test scores from eighth grade, and their most recent 2010 math and reading test scores). This linking of the files enabled us to perform the analyses of the relationships between PLC participation and teacher characteristics (e.g., what types of teachers tend to participate in PLCs?) and PLC participation and student achievement (e.g., do varying quantities, and forms, of PLC participation relate to student achievement outcomes?).

The results showed that, while there is some variability across schools, most teachers and schools in St. Paul participate in thriving PLCs. Though this is a positive outcome in one respect, it is a negative outcome for the research study. The reason this is the case is because there is little variation in reported PLC participation across the district's seven high schools—the quality and quantity of participation is, apparently, high across all of the schools. Indeed, nearly 90 percent of the teachers surveyed reported participating in a PLC. With few differences in PLC participation, the potential for a high-quality "comparison group" becomes compromised. In sum, mounting this evaluation effort after the PLC reform had taken hold in the district limited our ability to identify and document the full impact. These results suggest that future policy adoptions could benefit from simultaneously-adopted research efforts.

INTRODUCTION

INTRODUCTION

SUPPORTING TEACHER EFFECTIVENESS AND SCHOOL-LEVEL CAPACITY TO IMPROVE STUDENT ACHIEVEMENT

Since the 1980s, competing, and often contradictory, reforms have combined top-down, centralized efforts to improve schools and teaching with efforts at decentralization and school-based management (Rowan, 1990). The general spirit of today's reform efforts continues to articulate top-down standards, which dictate much of the changes in the content of schooling, but fundamentally leaves the process of school change up to the discretion of local educators.

These two models of school reform, referred to by Rowan (1990) as the *control* and *commitment* strategies for organization design, rely on different organization design features and attempt to affect different school processes to achieve school effectiveness. The *control* strategy involves the development of an elaborate system of input, behavior, and output controls designed to regulate classroom teaching and standardize student opportunities for learning, and the expected result is an increase in student achievement. In this approach to organization design, centralized decision-making and standardized working procedures promote efficiency by focusing workers' efforts on achieving clearly defined goals and by minimizing workers' deviation from the prescribed means of achieving the goals. Thus, it should come as little surprise that educational managers and policymakers who were willing to assume that classroom instruction could be routinized were also willing to implement input, output, and behavior controls in schools.

In the mid-1980s, however, researchers began to question this strategy for school reform. In part, this occurred as research on teaching turned away from the study of routine teacher behaviors and began to focus on the study of teachers as active decision makers working in complex classroom environments. What has emerged from this line of research is a view of instruction not as a set of routine behaviors that can be scripted and implemented uniformly in classrooms, but rather a view of teaching as a nonroutine technology that relies on teacher judgment and expertise for its success (Berliner, 1986; Brophy & Evertson, 1976; Shulman, 1987).

Thus, the *commitment* strategy for organization design rejects bureaucratic controls as a mode of school improvement and instead seeks to develop innovative working arrangements that support teachers' decision-making and increase teachers' engagement in the tasks of teaching. The assumption of this latter approach is that collaborative and participative management practices will unleash the energy and expertise of committed teachers and thereby lead to improved student learning.

This revised view of teaching has important implications for the organizational design of schools. Organization theorists predict that when technologies are complex and not routine, organizational effectiveness is enhanced by developing what Burns and Stalker (1961) called "organic" forms of management. Nonroutine technologies require workers to engage in frequent searches for solutions to complex technical problems (Perrow, 1967), and as workers require more technical information to solve these problems, hierarchical and standardized approaches to work become inefficient. As a result, organizations develop lateral patterns of communication. Network structures replace hierarchical structures of management, and technical work comes to be guided by information and advice received from colleagues rather than by centralized and standardized task instructions. In this situation, a system of ad hoc centers of authority and communication emerges, with those possessing relevant information and expertise assuming leadership no matter what their formal position of authority. Themes consistent with this approach can be found in the literature on "restructured" schools, in recent discussions of teacher professionalism, and in the literature on distributed leadership within schools (Spillane & Diamond, 2007).

Within the Saint Paul Public Schools (SPPS), high schools have been experimenting with this relatively new paradigm for school reform, which has been described using various terms: "learning communities;" "learning teams;" "professional communities;" and "professional learning communities." The term within SPSS is "professional learning community" (or the acronym "PLC"), which we will use throughout the remainder of this report.

In the school reform literature, specifically that dealing with the "restructuring movement," PLCs are school organizational structures constructed around the contention of Fullan (1993) and others that the creation and implementation of "learning communities" is crucial to the future of organizations facing major change. Louis, Kruse, and Marks (1996) produced a widely accepted explication of five major characteristics of successful PLCs:

1) Shared Norms and Values. In a PLC, all school staff, not just the building administrator, are instrumental in the development of the school's mission and vision statements. The school's mission and goals are co-constructed from the beliefs and knowledge of the entire staff concerning how it can best serve its students;
2) Collective Focus on Student Learning. Educators in PLCs focus on student learning as the end and on teaching as the means to achieve that end. Departments clarify and develop norms among themselves regarding the standards for quality student performance, and take collective responsibility for the success of all students;
3) Collaboration. Each PLC consists of a group of collaborative teams that share the common purpose to improve instruction and learning. In contrast to the isolation in which teachers in traditional high schools work, members of a PLC routinely share expertise and perspectives on teaching and learning processes, examine student data, and develop a sense of mutual support and shared responsibility for effective instruction;
4) Deprivatized Practice. In contrast to the traditional model of school organization, PLCs focus on deprivatizing teacher practice. Teachers routinely visit each other's classrooms to observe master teaching, coach one another, mentor, and solve problems; they look collaboratively at student work; and they develop common standards and assessments;
5) Reflective Dialogue. Through focused conversations and reflection centered on teaching and learning, teachers in PLCs develop shared understandings of such things as the purpose of, and processes for, learning.

Two correlational studies indicated that schools that adopted the PLC model were substantially more successful than those which sought to restructure without making similar changes in school organization. Lee, Smith, and Croninger (1995) examined data from the National Education Longitudinal Study (NELS) for over 11,000 students in 820 secondary schools and found that schools adopting the PLC model had lower rates of dropout and absenteeism than did traditional high schools. Also, the authors found that students whose teachers participated in PLCs made greater gains in achievement in mathematics, science, history, and reading than did their counterparts in other schools. Finally, this study showed smaller achievement gaps among students from different social class and racial/ethnic backgrounds. Work by Newmann and Wehlage (1995), which included longitudinal case studies, surveys, and collection of student test data, suggested that the most successful schools functioned as PLCs in which teachers collaborated, took collective responsibility for student learning, and strove for continuous improvement in their professional practice.

These studies, combined with a substantial amount of anecdotal evidence (DuFour & Eaker, 1998; Fullan, 2001; Joyce & Showers, 2002; among others), led some to conclude that "the concept of the professional learning community is one of the most powerful ideas affecting research and practice in staff development in the last decade" (Lieberman, 1999); and that "the most promising strategy for substantive school improvement is developing the capacity of school personnel to function as a professional learning community" (Eaker, DuFour, & Burnette, 2002). Yet overall, the existing evidence supporting the effects of PLCs on enhancing teachers' professional development, instructional effectiveness, and, in turn, their students' achievement is quite modest. There are promising anecdotal and correlational results, but there have been no rigorous quasi-experiments or experiments of PLCs that are known.

The general theory supporting the appropriateness of "organic" models of school organization, along with the theory and "practical wisdom" of the PLC model, seem to offer some promise for school improvement. To pursue

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the collection of additional evidence of the outcomes for teachers and students in PLCs would seem to offer some clear benefits to the SPPS and to the education field in general.

These ideas regarding PLCs have been implemented across all high schools in Saint Paul, but more recently in some than others. The roll out of this initiative to support the development of PLCs began during the 2008-2009 school year. This transition included two major components: (1) a full-time coach for each high school; and (2) a call for implementation of PLCs at all grade levels (PK-12). The model includes the development, use, and discussion of common formative assessments as a core activity for PLCs. Further, the work of the in-building coaches should be integrated with the work of the PLCs to provide job-embedded professional development to teachers. Yet due to a voluntary program promoted by the Director of Secondary Education in 2003, two secondary schools began implementing PLCs ahead of the district mandate.

The implementation schedules within these two schools were ahead of those within the other five SPPS high schools, which more recently began to understand and implement this ambitious reform to improve teacher effectiveness and school capacity.

This rolling adoption, and natural variation across schools and teachers offers the potential to observe variation in the schools' and teachers' adoptions of the PLC approach. Capitalizing on this natural variation, we hoped to develop statistical models that would allow us to examine the multi-level relationships between teacher participation in PLCs and their students' math and reading outcomes. That is, we test the hypothesis: Is teacher participation in PLCs related to their students' state math and reading achievement outcomes?

METHODOLOGY

METHODOLOGY

The correlational evaluation of the PLC model that we carried out involved efforts to understand differences among teachers in PLC participation across the seven SPPS high schools. In addition, by linking teacher data on PLC participation and other teacher characteristics with the student achievement data, we examined correlational results for students nested within the various teachers' classrooms across the seven schools. In collaboration with SPPS stakeholders, this study was designed to understand the overall relationships between teacher characteristics and PLC participation and the potential associations between student achievement and their teachers' PLC participation.

Initially, we had hoped to contrast the teacher survey data and student achievement data from the two schools that have had a longer history of implementing PLCs with survey and achievement data from matched teachers and students from the five other schools with relatively shorter implementation histories and, in theory, limited or no use of the PLC model. Using propensity score matching techniques (Rosenbaum & Rubin, 1983), we had proposed to use survey data and other teacher and classroom information to attempt to match teachers based on their propensity to implement the PLC model and students on their propensity to take a class from a teacher engaged in the PLC approach. These quasi-experimental comparisons were planned to estimate the potential value-added achievement outcomes associated with participation in PLCs.

However, in reviewing the survey data, we did not find the uneven patterns of PLC participation across the seven schools we had anticipated. As a result, it was not possible to identify a quasi-experimental comparison group consisting of teachers with no, or very limited, PLC participation. Our analyses, therefore, investigated the variability in PLC participation and how that variability related to differences in student achievement. This correlational analysis was deemed by SPPS to be of interest and potentially informative, especially considering the nearly ten year history of district-wide support that SPPS has provided for implementation of PLCs.

We received the data files necessary for the evaluation of the PLCs at the seven participating high schools during fall 2010. Teachers in our sample completed the Learning Community Culture Indicator (LCCI) (Matthews, Williams, Stewart, and Hilton, 2007), which is a survey that the SPPS has administered to measure the level at which a school may be functioning with respect to eight common elements of PLCs:

- Common Mission, Vision, Values, and Goals That Are Focused on Teaching and Learning
- Principal Leadership That Is Focused on Student Learning
- Participative Leadership That Focuses on Teaching and Learning
- Interdependent Culture Based on Trust
- Systems of Prevention and Intervention that Assures for Academic Success for all Students;
- Professional Development That is Teacher Driven and Embedded in Daily Work
- Data Based Decision-Making Using Continuous Assessment
- Collaborative Teaming

The LCCI is an online survey tool that is 57 items in length and takes approximately 20-30 minutes to complete. The responses are based on an 11-point Likert Scale of "Strongly Agree" to "Strongly Disagree." In addition, the survey was modified to include an item asking teachers to report how frequently they met with their PLC colleagues. This item provides a good index of the intensity of the PLC efforts. The additional items are a good index, primarily, of the quality of the PLC activities.

We linked the teachers' survey data to other teacher information (e.g., years of experience, gender, and age), the classes they taught (e.g., algebra, science, English), the PLC to which they belonged, and the students they taught within each class, along with the students' demographics and test scores (e.g., eligibility for free lunch, gender, race/ethnicity, prior test scores from eighth grade, and their most recent 2010 math and reading test scores). This linking of the files enabled us to perform the

analyses of the relationships between PLC participation and teacher characteristics (e.g., what types of teachers tend to participate in PLCs?) and PLC participation and student achievement (e.g., do varying quantities, and forms, of PLC participation relate to student achievement outcomes?).

The items are consistent with the elements of PLCs as defined in the academic literature. The instrument has been revised in response to feedback from teacher focus groups and pilot studies. Statistical properties of the LCCI reported from the final pilot study suggest that it has reasonably good statistical properties (Stewart, 2009). Exploratory and confirmatory factor analyses suggested that the items fit well to the constructs, and Cronbach's alpha reliability coefficients for the individual constructs within the survey were typically greater than 0. 8.

Prior to our study, SPPS had used the LCCI at the elementary and middle-school levels. The spring 2010 administration of the LCCI, which provided the data for our analyses, was the first offered to the high schools targeted for our analyses. The St. Paul high schools in our analysis included: Harding High School, Highland High School, Arlington High School, Central High School, Humboldt High School, Johnson High School, and Como Park High School.

PRIMARY RESEARCH QUESTIONS

The primary purpose of our study was to determine whether teacher-reported measures of professional learning communities—as measured by the Learning Community Culture Indicator (LCCI) survey—are correlated with tenth- grade student reading test scores, after statistically controlling for, or holding constant, students' baseline student achievement scores and other covariates.

Also, we conducted exploratory analyses to determine which teacher characteristics may predict participation in PLCs.

For this correlational study of the PLC model, we asked two primary questions:

1. What teacher characteristics predict PLC participation across the 7 SPPS high schools? Who participates?
2. What is the "value-added" of PLC participation on student achievement outcomes? Do teachers who report stronger participation in PLCs achieve greater achievement gains for their students?

DATA

This analysis draws upon data from two general sources: student records from SPPS and the 2010 administration of Learning Community Culture Indicator (LCCI) survey. The SPPS records include a 2010-11 tenth-grade test score file, an eighth-grade test score file from for the same student cohort, and a student course enrollment file in order to identify the tenth grader's English/language art (ELA) and mathematics teachers. The LCCI survey was administered to teachers from the entire school district, including elementary and middle schools. The dataset for the analysis included tenth-grade students with eighth-grade pretest scores, who can be matched to a teacher who took the LCCI survey. This introduces three opportunities for missing data: a missing pretest; a missing teacher ID; and missing LCCI data from the teacher.

Student Data. The student enrollment file included 2,702 uniquely identified tenth grade students. All students in the file had complete information regarding: gender; free lunch status; and race/ethnicity). Of these student records, 237 did not have a tenth-grade state MCA-II reading test score, leaving 2,465 students with complete test score outcome data. An additional 607 students were missing eighth-grade pretest data, leaving 1,858 of 2,702 (69%) students with two valid test scores across the two years.

METHODOLOGY (CONT'D)

Course enrollment data were then necessary to link each student to a subject-specific teacher ID variable. This link allowed us to associate each student with his or her tenth-grade ELA and math teachers. For our ELA analysis, to include a larger and more generalizable student and teacher sample, we considered all English language learner (ELL) and English Language Arts departments together, but still, 652 students could not be matched to an ELL or ELA teacher. Only 149 students could not be matched to their respective tenth-grade math teachers.

Thus, prior to matching the linked student and teacher files to the LCCI data, the original sample of 2,702 students was reduced to 1,206 (see Table 1). Relative to the complete file of 2,702 students, the matched student file of 1,206 was composed of tenth graders who were slightly higher achieving, less disadvantaged, and more likely to be male (see Table 2). For example, the average test score of a tenth grader from the original enrollment file was 1049.34, and 78 percent of these students received free lunches. However, in the final sample, which included only those students with a prior eighth grade test score who were also linked to a teacher with a complete LCCI survey, the average tenth grade reading score of 1052. 68 was slightly higher and the free lunch participation rate of 76 percent was somewhat lower.

LCCI Data. The LCCI survey was administered district-wide, including to elementary and middle schools. Of the 465 teachers who took the survey, 285 (61 percent) reported being a staff member at the seven SPPS high schools. Across the seven high schools in our sample, the following numbers of teachers responded to the LCCI survey: Arlington High School, n = 86; Central High School, n = 94; Como Park High School, n = 75; Harding High School, n = 115; Highland High School, n = 70; Humboldt High School, n = 70; Johnson High School, n = 80. As shown in Table 3, in this sample the LCCI scales achieved good measurement properties with high Cronbach alpha internal consistency reliabilities and inter-item covariances.

Of the teachers who completed the survey, over 60 percent were female, their average age was 42, and they had more than 14½ years of teaching experience, on average. These summary statistics are presented in Table 4. In addition, 90 percent of the teachers reported that they are members of a PLC, and, on average, had participated for over two years. The LCCI scales range from 0 to 10, and the overall average for most of the scales is between six and eight. The observed means for all of the LCCI measures are also presented in Table 4.

TABLE 1. MISSING DATA

	N	%
TENTH-GRADE ENROLLMENT FILE	2,702	100%
TENTH-GRADE READING TEST	2,465	91%
EIGHTH-GRADE READING TEST	1,858	69%
DEMOGRAPHIC INFORMATION	1,858	69%
ELA OR ELL TEACHER ID[a]	1,206	45%
LCCI SURVEY[b]	626	23%

Note: [a] For Math Teacher ID, N = 1709; [b] For Math Teacher ID, N = 909

TABLE 2. SAMPLE CHARACTERISTICS BY DATA AVAILABILITY

	ENROLLMENT FILE			8TH & 10TH GR. TEST		TEACHER ID		LCCI AVAILABLE	
	N	MEAN	S. D.	MEAN[a]	S. D.	MEAN[b]	S. D.	MEAN[c]	S. D.
TENTH-GRADE READING	2,465	1,049. 34	14. 42	1,050. 62	14. 00	1,053. 07	14. 13	1,052. 68	14. 24
EIGHTH-GRADE READING	1,972	847. 08	15. 04	847. 41	15. 09	850. 11	15. 44	850. 10	15. 74
WHITE	2,702	21%		23%		26%		25%	
BLACK	2,702	29%		27%		25%		23%	
HISPANIC	2,702	12%		12%		11%		12%	
ASIAN	2,702	37%		37%		36%		39%	
AMERICAN INDIAN	2,702	2%		1%		2%		1%	
FEMALE	2,702	50%		50%		53%		54%	
EVER ELIGIBLE FOR FRL	2,702	78%		77%		73%		76%	

Notes: [a] N = 1,858; [b] N = 1,206; [c] N = 626

TABLE 3. LCCI SCALE PROPERTIES FOR THE SAMPLE

SCALE	NUMBER OF ITEMS	AVERAGE INTER-ITEM COVARIANCE	ALPHA
COMMON MISSION	4	1. 620	0. 821
INTERDEPENDENT CULTURE	6	1. 764	0. 823
COLLABORATIVE TEAMING	6	2. 064	0. 743
SYSTEMS OF PREVENTION	6	2. 018	0. 755
DATA-BASED DECISION MAKING	7	1. 640	0. 795
PROFESSIONAL DEVELOPMENT	6	2. 572	0. 804
PRINCIPAL LEADERSHIP	5	3. 034	0. 852
PARTICIPATIVE LEADERSHIP	5	4. 817	0. 896
ALL SCALES	**8**	**1. 145**	**0. 832**

TABLE 4. LCCI SURVEY SUMMARY STATISTICS

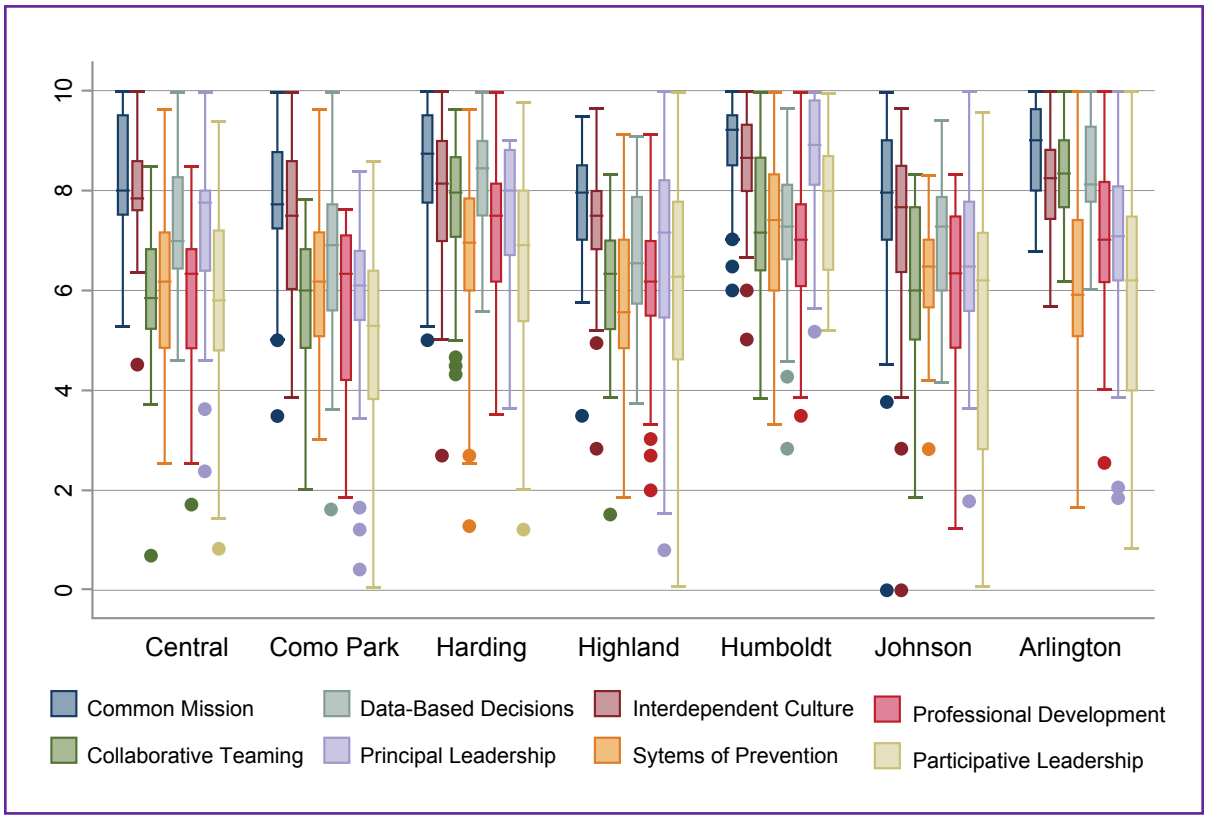
VARIABLE	OBS*	MEAN	STD. DEV.	MIN	MAX
FEMALE	285	0. 61	0. 49	0	1
AGE (CATEGORY MEANS)	285	42. 30	11. 90	23	63
EXPERIENCE (CATEGORY MEANS)	285	14. 68	9. 06	2	32
3 YEARS OR FEWER YEARS' EXPERIENCE	285	0. 12	0. 32	0	1
YEARS IN CURRENT POSITION	285	8. 36	6. 56	2	26
NOT IN A PLC	285	0. 11	0. 31	0	1
MONTHS IN A PLC	274	32. 89	27. 08	4	201
YEARS IN A PLC	274	2. 74	2. 26	0. 33	16. 75
LCCI SCALES					
COMMON MISSION	285	8. 29	1. 40	0	10
INTERDEPENDENT CULTURE	285	7. 82	1. 46	0	10
COLLABORATIVE TEAMING	272	6. 89	1. 67	0. 67	10
SYSTEMS OF PREVENTION	279	6. 41	1. 64	1. 33	10
DATA-BASED DECISION MAKING	277	7. 45	1. 48	1. 57	10
PROFESSIONAL DEVELOPMENT	278	6. 47	1. 80	1. 2	10
PRINCIPAL LEADERSHIP	274	7. 19	1. 90	0. 4	10
PARTICIPATIVE LEADERSHIP	274	6. 09	2. 32	0	10

* Observations

Figure 1 summarizes the values of the reported responses within and between the seven schools. These box-and-whisker plots designate the outcomes for each scale from the LCCI for teachers from each of the seven high schools. The bottom and top of each box are the 25th and 75th percentiles (the lower and upper quartiles, respectively), and the band near the middle of the box is the 50th percentile, or median. The whiskers beyond the boxes define reported values that are outside the 25th or 75th percentiles, and the remaining dots represent extreme, or outlier, responses. This figure offers a graphical depiction of how the outcomes differed across the various scales and across the seven schools.

The results show, as mentioned above, that most of the observed means for the scales fall between six and eight on the 0-10 scale. This indicates a fairly high level of overall use of PLCs, and low variability within and between schools. The figure also suggests other interesting details, including that the measure of Participative Leadership had the most within-school variation of all LCCI scales—this finding seems to be consistent across all seven high schools.

FIGURE 1. SCHOOL MEAN LCCI SCALE VALUES



METHODOLOGY (CONT'D)

Matching LCCI Data to Student Data. As Table 5 shows, the LCCI survey elicited responses from teachers across numerous departments in the seven high schools. Due to the timing of the state MCA-II test, student outcome data are available in reading only. Thus, the focal teacher is the ELA or ELL teacher. Approximately half of the ELA or ELL teachers who were matched to the student sample have LCCI measures (a similar proportion was available for math).

This yields 626 students who have two test scores and have a known ELA or ELL teacher who took the LCCI survey (23 teachers). There are 909 students in 45 math classrooms with the two reading test scores. As shown in Table 2, this group is slightly more advantaged than the original sample. Though the most direct relationships is between ELA/ELL teacher PLC participation and student reading achievement, we also run exploratory analyses with the matched math teachers.

TABLE 5. TEACHER'S ACADEMIC SUBJECT ASSIGNMENT

	FREQ.	PERCENT	CUM.
CTE	5	1. 75	1. 75
FINE ARTS	8	2. 81	4. 56
HEALTH/PE	4	1. 4	5. 96
LANGUAGE ARTS	29	10. 18	16. 14
LIBRARY MEDIA	3	1. 05	17. 19
LITERACY SPECIALIST	2	0. 7	17. 89
MATHEMATICS	39	13. 68	31. 58
SCIENCE	28	9. 82	41. 4
SOCIAL STUDIES	16	5. 61	47. 02
SPECIAL EDUCATION	38	13. 33	60. 35
TEACHER	79	27. 72	88. 07
TECHNOLOGY	3	1. 05	89. 12
WORLD LANGUAGES	15	5. 26	94. 39
OTHER	16	5. 61	100
TOTAL	**285**	**100**	

RESULTS

RESULTS

We estimated the following equation to identify how the PLC scales, as measured by the LCCI survey, are associated with tenth-grade reading achievement:

$$Y_{ij} = \gamma_{00} + \gamma_{10} * Female_{ij} + \gamma_{20} * FRL_{ij} + \gamma_{30} * Nonwhite_{ij}$$
$$+ \gamma_{40} * Pretest_{ij} + \gamma_{01} * LCCI_{j} + \sum_{i=2}^{7} \gamma_{0i} School\_i_{j} + u_{0j} + r_{ij}$$

In this model, the subscript i indexes the student and j indexes the teacher. The model controls for prior achievement, student gender, student free/reduced lunch status, and race/ethnicity. The model also includes indicators for the schools the students attend. The coefficient of interest, γ_{01}, represents the expected change in conditional student achievement associated with a one unit change in an LCCI measure. Both the pretest and the LCCI variables are centered around their respective grand (sample) mean. The hypothesis we test with this model is that γ_{01} is statistically significantly greater than 0—that there is a statistically meaningful relationship between tenth-grade reading achievement and the level at which a PLC may be functioning with respect to eight key elements of PLCs.

There are eight LCCI measures; we ran each of them in a separate model (eight in reading classrooms, eight in math classrooms). The results of the analysis are presented in Table 6 (for the reading teacher sample) and Table 7 (for the math teacher sample). Each of the LCCI variables is centered around its respective grand mean. From a practical standpoint, therefore, the coefficient corresponding to each LCCI score may be interpreted as the change—positive or negative—in student achievement that is associated with a one-unit change in a teacher's response to that LCCI scale item.

As the results show, the coefficients for both samples are in both the negative and positive directions, and there is no apparent pattern to the results. In fact, half are negative and half are positive, and none of the coefficients are statistically significant. Consequently, we cannot reject the null hypothesis that the LCCI scale variables are unrelated to tenth-grade reading achievement in these models. In other words, these analyses fail to provide evidence of a systematic relationship between student achievement and the quality of PLC participation.

TABLE 6. REGRESSION RESULTS FOR ELA/ELL TEACHER SAMPLE

	MODEL 0. 1	MODEL 0. 2	MODEL 0. 3	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7	MODEL 8
INTERCEPT	1045. 683*** (2. 932)	1057. 257*** (0. 884)	1058. 013*** (1. 206)	1057. 773*** (1. 328)	1058. 368*** (1. 424)	1058. 256*** (1. 281)	1058. 020*** (1. 250)	1058. 605*** (1. 554)	1057. 664*** (1. 42)	1058. 104*** (1. 328)	1057. 972*** (1. 533)
COMMON MISSION				-0. 432 (0. 341)							
COLLABORATIVE TEAMING					0. 179 (0. 342)						
DATA-BASED DECISIONS						0. 401 (0. 559)					
INTERDEPENDENT CULTURE							-0. 305 (0. 310)				
PARTICIPATIVE LEADERSHIP								0. 186 (0. 266)			
PROFESSIONAL DEVELOPMENT									-0. 156 (0. 268)		
PRINCIPAL LEADERSHIP										0. 336 (0. 473)	
SYSTEMS OF PREVENTION											-0. 034 (0. 378)
SCHOOL CONTROLS	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
FEMALE		-2. 787*** (0. 623)	-2. 749*** (0. 628)	-2. 775*** (0. 628)	-2. 739*** (0. 629)	-2. 770*** (0. 629)	-2. 765*** (0. 629)	-2. 730*** (0. 629)	-2. 76*** (0. 629)	-2. 756*** (0. 629)	-2. 749*** (0. 629)
FRL		-2. 783** (0. 911)	-2. 565** (0. 940)	-2. 511** (0. 940)	-2. 549** (0. 941)	-2. 537** (0. 941)	-2. 574** (0. 940)	-2. 586** (0. 945)	-2. 512** (0. 943)	-2. 579** (0. 944)	-2. 532** (0. 943)
NON-WHITE		-1. 308 (0. 866)	-1. 363 (0. 868)	-1. 351 (0. 868)	-1. 380 (0. 869)	-1. 337 (0. 869)	-1. 340401 (0. 869)	-1. 370 (0. 868)	-1. 375 (0. 868)	-1. 339 (0. 870)	-1. 375 (0. 869)
PRETEST		0. 687*** (0. 024)	0. 689*** (0. 026)	0. 685*** (0. 026)	0. 682*** (0. 027)	0. 685*** (0. 026)	0. 692*** (0. 027)	0. 682*** (0. 027)	0. 687*** (0. 026)	0. 684*** (0. 027)	0. 685*** (0. 026)
CLASSROOM VARIANCE	175. 183	1. 419	1. 036	1. 647	1. 457	1. 233	1. 283	1. 853	1. 355	1. 747	1. 555
STUDENT VARIANCE	107. 029	58. 551	58. 613	58. 391	58. 564	58. 600	58. 543	58. 452	58. 584	58. 474	58. 566
INTRA-CLASS CORR.	0. 62	0. 02	0. 02	0. 03	0. 02	0. 02	0. 02	0. 03	0. 02	0. 03	0. 03

Notes: 626 students in 23 classrooms. Standard errors in parentheses.
*Pretest and survey measures centered at the population mean. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.*

TABLE 7. REGRESSION RESULTS FOR MATH TEACHER SAMPLE

	MODEL 0. 1	MODEL 0. 2	MODEL 0. 3	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7	MODEL 8
INTERCEPT	1048. 593*** (1. 385)	1055. 049*** (0. 775)	1057. 387*** (1. 015)	1057. 432*** (0. 736)	1057. 786*** (1. 217)	1057. 073*** -1. 093322	1057. 299*** (1. 026)	1057. 127*** (1. 067)	1057. 295*** (1. 023)	1056. 934*** (1. 012)	1057. 735*** (1. 091)
COMMON MISSION				0. 116 (0. 254)							
COLLABORATIVE TEAMING					0. 208 (0. 338)						
DATA-BASED DECISIONS						-0. 282 -0. 335989					
INTERDEPENDENT CULTURE							0. 239 (0. 265)				
PARTICIPATIVE LEADERSHIP								-0. 135 (0. 163)			
PROFESSIONAL DEVELOPMENT									-0. 163 (0. 206)		
PRINCIPAL LEADERSHIP										-0. 337 (0. 167)	
SYSTEMS OF PREVENTION											0. 267 (0. 295)
SCHOOL CONTROLS	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
FEMALE		-2. 782*** (0. 505)	-2. 794*** (0. 503)	-2. 792*** (0. 474)	-2. 800*** (0. 504)	-2. 782*** (0. 504)	-2. 787*** (0. 504)	-2. 788*** (0. 504)	-2. 794*** (0. 504)	-2. 770*** (0. 503)	-2. 807*** (0. 504)
FRL		-2. 480** (0. 763)	-2. 232** (0. 767)	-2. 211** (0. 718)	-2. 223** (0. 768)	-2. 224** (0. 768)	-2. 241** (0. 768)	-2. 214** (0. 768)	-2. 210** (0. 768)	-2. 162** (0. 767)	-2. 212** (0. 768)
NON-WHITE		-2. 419** (0. 787)	-2. 601*** (0. 785)	-2. 608** (0. 887)	-2. 605*** (0. 785)	-2. 561** (0. 786)	-2. 583** (0. 785)	-2. 560** (0. 786)	-2. 573** (0. 786)	-2. 510** (0. 785)	-2. 609*** (0. 785)
PRETEST		0. 649*** (0. 020)	0. 644*** (0. 020)	0. 643*** (0. 024)	0. 642*** (0. 021)	0. 642*** (0. 021)	0. 643*** (0. 020)	0. 643*** (0. 021)	0. 641*** (0. 021)	0. 637*** (0. 021)	0. 644*** (0. 020)
CLASSROOM VARIANCE	72. 935	2. 443	1. 369	1. 488	1. 445	1. 560	1. 447	1. 440	1. 378	1. 046	1. 416
STUDENT VARIANCE	118. 882	56. 037	55. 957	55. 956	55. 960	55. 889	55. 933	55. 943	55. 976	55. 930	55. 946
INTRA-CLASS CORR.	0. 38	0. 04	0. 02	0. 03	0. 03	0. 03	0. 03	0. 03	0. 02	0. 02	0. 02

Notes: 909 students in 45 classrooms. Standard errors in parentheses.
*Pretest and survey measures centered at the population mean. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.*

With regard to the *quantity* of PLC participation, we operationalized this in two ways: whether or not a teacher reported that s/he participated in a PLC, and the number of months the teacher reported participating in a PLC. In Table 8, the results from the analysis of the quantity of participation suggested that neither participation in a PLC (*versus* no participation) nor months of participation was associated with student achievement outcomes for the ELA/ELL teacher sample. Some of the predictors we use that identify the students' backgrounds, including their gender, free lunch status, and eighth grade pretest, are statistically significant predictors of reading achievement. These statistically significant predictors are indicated in Tables 8 and 9 with one, two, or three asterisks. For instance, in our final model, Model 2, in Table 8, we see that a one-unit increase in the pretest score of a student is associated with a 0. 688 unit increase on the tenth grade reading posttest score. Also, our results suggest that student receiving free lunch typically achieved lower tenth-grade reading scores than students who did not receive free lunch. Free lunch participation, an indicator of poverty, is associated with a score that is 2. 266 points lower than the score for a non-free-lunch student. The same result was found for the math teacher sample, as reported in Table 9. Therefore, with respect to the overall level of participation in PLCs and the potential association it may have with student achievement, in neither case, in terms of participation *versus* nonparticipation or months of PLC participation, was it found to relate to achievement.

TABLE 8. REGRESSION RESULTS FOR ELA/ELL TEACHER SAMPLE

	MODEL 0. 1	MODEL 0. 2	MODEL 1	MODEL 2
INTERCEPT	1044. 591*** (2. 839)	1051. 301*** (0. 485)	1055. 621*** (1. 641)	1057. 290*** (2. 555)
NOT IN PLC			0. 676 (3. 742)	
MONTHS IN PLC				-0. 032 (0. 039)
SCHOOL CONTROLS	NO	NO	YES	YES
FEMALE			-2. 493*** (0. 638)	-2. 486*** (0. 637)
FRL			-2. 272* (0. 979)	-2. 266* (0. 977)
NON-WHITE			-1. 207 (0. 898)	-1. 202 (0. 898)
PRETEST		0. 709*** (0. 024)	0. 693*** (0. 026)	0. 688*** (0. 026)
CLASSROOM VARIANCE	154. 631	1. 550	1. 295	1. 810
STUDENT VARIANCE	104. 892	58. 333	55. 702	55. 524
INTRA-CLASS CORR.	0. 60	0. 03	0. 02	0. 03

Notes: 578 students in 22 classrooms. Standard errors in parentheses.
*Pretest centered at the population mean. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.*

RESULTS (CONT'D)

TABLE 9. REGRESSION RESULTS FOR MATH TEACHER SAMPLE

	MODEL 0. 1	MODEL 0. 2	MODEL 1	MODEL 2
INTERCEPT	1048. 494*** (1. 414)	1049. 624*** (0. 436)	1057. 445*** (1. 007)	1056. 554*** (1. 293)
NOT IN PLC			-1. 832987 (1. 093)	
MONTHS IN PLC				0. 016 (0. 014)
SCHOOL CONTROLS	NO	NO	YES	YES
FEMALE			-2. 825*** (0. 507)	-2. 794*** (0. 509)
FRL			-2. 355** (0. 771)	-2. 233** (0. 771)
NON-WHITE			-2. 521** (0. 789)	-2. 571** (0. 788)
PRETEST		0. 682*** (0. 020)	0. 646*** (0. 020)	0. 641*** (0. 021)
CLASSROOM VARIANCE	74. 585	4. 158	1. 046	1. 442
STUDENT VARIANCE	118. 856	59. 804	56. 274	56. 159
INTRA-CLASS CORR.	0. 39	0. 07	0. 02	0. 03

Notes: 900 students in 44 classrooms. Standard errors in parentheses.
*Pretest centered at the population mean. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.*

DISCUSSION

DISCUSSION

Our literature review suggested that there are some compelling theoretical and empirical reasons to believe that the quantity and quality of a teacher's PLC participation will relate to how well his or her students perform on key assessments of student progress. New standards and accountability mandates, among other things, require instructional change, and learning communities are crucial to the future of organizations facing major change.

The St. Paul Public Schools seem to have been effective in spreading this message. Though there is some variability across schools, most teachers and schools participate in thriving PLCs. Though this is a positive outcome in one respect, it is a negative outcome for the research study.

The reason this is the case is because there is relatively little variation in reported PLC participation across the district's seven high schools—the quality and quantity of participation is, apparently, high across all of the schools. Indeed, nearly 90 percent of the teachers surveyed reported participating in a PLC. With few differences in PLC participation, the potential for a high-quality "comparison group" becomes compromised. That is, if we want to find out whether there is a relationship between student achievement and teachers' PLC participation when virtually everyone has been exposed to the PLC model, it becomes an exercise in futility as the comparison or contrast to a non-PLC participant is infrequent and unusual.

Other factors may account for the lack of a relationship between reported PLC participation and student achievement. For example, the study design relied on teachers' self-reports of PLC participation. There may be considerable "social desirability" associated with responses of significant PLC participation. It is human nature to respond in a way that will please, and given the district-wide focus on supporting PLCs, teachers may be inclined to view their PLC participation in a more positive way and report it, as such, on the LCCI survey. A measure clouded by social desirability may easily obscure the true relationship between PLC participation and student achievement.

These results also suggest that future policy adoptions could benefit from simultaneously adopted research efforts. The need to innovate and improve is fundamentally linked with the need to research and evaluate the effectiveness of education reform efforts. This comprehensive, forward-looking approach to reform, and the wealth of data we stand to gain, is critical to sustaining and accelerating the pace of improvement in schools.

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APPENDIX

APPENDIX: LCCI SCALE ITEMS

1. COMMON MISSION, VISION, VALUES, AND GOALS THAT ARE FOCUSED ON TEACHING AND LEARNING

1CM. The primary purpose of our school is to help all children learn at high levels.

2CM. We are trying to create a school culture in which more students would achieve at high levels.

3CM. I am aligning my efforts with a primary purpose of the school, which is to help all children learn at high levels.

4CM. Our school-wide goals and objectives guide teachers' work to help more students achieve at high levels.

2. INTERDEPENDENT CULTURE BASED ON TRUST

5IC. I share my knowledge and expertise with other teachers to solve problems of teaching and learning.

6IC. I seek out other teachers' expertise to help me solve problems of teaching and learning.

7IC. In addition to formal team meetings, teachers in this school spontaneously collaborate to solve problems of teaching and learning.

8IC. The trust I feel among teachers facilitates open decision-making and problem solving.

9IC. I feel safe to take the risk of using innovative instructional methods.

10IC. I feel safe to express my opinions when I am in the minority.

3. COLLABORATIVE TEAMING

11CT. I am on an instructional team that collaborates to improve teaching and learning.

13CT. My instructional team meetings are scheduled during the contracted day (e.g., common preparation periods, early out, late start).

14CT. My instructional team has sufficient collaboration time to improve teaching and learning.

15CT. My instructional team's processes lead to improved student learning

16CT. My instructional team collaborates on finding instructional solutions that help all students improve their learning.

17CT. My instructional team finds the most effective instructional approaches to help students master selected learning targets

4. SYSTEMS OF PREVENTION AND INTERVENTION THAT ASSURES ACADEMIC SUCCESS FOR ALL STUDENTS

18SP. At my school, teachers provide high quality instruction for all students including those who may be at risk for academic failure.

19SP. The faculty in this school has enacted systems for intervening with students who are at risk for academic failure.

20SP. Any student who experiences academic difficulty in my class receives extra time and support.

21SP. In this school, the additional time and support for learning provided to students who experience academic difficulty are developed in a systematic way rather than being left to the discretion of teachers.

22SP. Rather than just being invited, students who experience academic difficulty are required to participate in activities that provide them with additional time and support for learning.

23SP. In instructional teams, we systematically assist students who have difficulty mastering core content by providing extra teacher-directed learning time.

5. DATA BASED DECISION-MAKING USING CONTINUOUS ASSESSMENT

24DB. My instructional team uses data from district or state end of level tests to make instructional decisions.

25DB. I use data from common assessments developed by my team to make instructional decisions.

26DB. My instructional team has identified common core learning standards on which we assess student learning.

27DB. I use evidence of student learning to adjust my instructional practice.

28DB. My instructional team has created common assessments.

29DB. My instructional team uses data from common assessments to guide student learning.

30DB. My instructional team continuously assesses student learning to guide instruction.

6. PROFESSIONAL DEVELOPMENT THAT IS TEACHER DRIVEN AND EMBEDDED IN DAILY WORK

31PD. My collaborative team process has been an important source of professional learning for me.

32PD. The professional development in which I participate in this school improves my classroom instruction.

33PD. Teachers participate in lesson studies, in which teachers co-develop lessons, observe a colleague teach the lessons to students, and critique and refine the lessons for use in their own classrooms.

34PD. Teachers help design professional development.

35PD. Teachers share their instructional expertise.

36PD. Teachers new to our school are provided with mentoring in a systematic way.

7. PRINCIPAL LEADERSHIP THAT IS FOCUSED ON STUDENT LEARNING

37PL. My principal focuses on improving student learning.

38PL. My principal coaches my instructional team towards improving student learning.

39PL. My principal uses data to improve teaching and learning.

40PL. My principal has helped to create conditions that improve student learning.

41PL. My principal has helped to create conditions that promote teacher learning.

8. PARTICIPATIVE LEADERSHIP THAT IS FOCUSED ON TEACHING AND LEARNING

42PA. Teachers help make school-wide decisions that relate to teaching and learning.

43PA. School administrator(s) seek my input on issues that relate to teaching and learning.

44PA. Teachers help make most decisions that relate to teaching and learning in this school.

45PA. Teachers are able to make good decisions regarding teaching and learning without being inhibited by layers of bureaucracy.

46PA. Teachers collaboratively exercise leadership with the principal on issues that relate to improving teaching and learning.

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