Title: The relationship between school leader collaboration and student achievement

Date: November 2016

Question: Could you provide information on the relationship between leadership behaviors (among site leaders and teachers) and student outcomes such as achievement or overall well-being?

Response:

We have prepared the following memo with information on collaboration between school leaders and teachers, and how behaviors of building culture and climate relate to student outcomes. Citations include a link to a free online version, when available. All citations are accompanied by an abstract, excerpt, or summary written by the author or publisher of the document. We have not done an evaluation of the methodological rigor of these resources, but provide them for your information only.

References

Achinstein, B. (2002). Conflict amid community: The micropolitics of teacher collaboration. *Teachers College Record*, 104 (3), 421-455. Retrieved on October 25, 2016, from http://schoolcontributions.cmswiki.wikispaces.net/file/view/Conflict+Amid+Community_+The+Micropolitics+of+Teacher+Collaboration.pdf/203655702/Conflict%20Amid%20Community_%20The%20Micropolitics%20of%20Teacher%20Collaboration.pdf

Abstract: A major reform surge that began in the mid-1980s has generated a renewed interest in fostering teacher community or collaboration as a means to counter isolation, improve teacher practice and student learning, build a common vision for schooling, and foster collective action around school reform. The term community often conjures images of a culture of consensus, shared values, and social cohesion. Yet, in practice, when teachers collaborate, they run headlong into enormous conflicts over professional beliefs and practices. In their optimism about caring and supportive communities, advocates often underplay the role of diversity, dissent, and disagreement in community life, leaving practitioners ill-prepared and conceptions of collaboration underexplored. This article draws on micropolitical and organizational theory to examine teacher communities. Building from case studies of two urban, public middle schools, this article shows that when teachers enact collaborative reforms in the name of community, what emerges is often conflict. The study challenges current thinking on community by showing that conflict is not only central to community, but how teachers manage conflicts, whether they suppress or embrace their

differences, defines the community borders and ultimately the potential for organizational learning and change.

Beaty-O'Ferrall, M. E., & Johnson, F. W. (2010). Using supportive team building to promote improved instruction, student achievement, and collaboration in an urban professional development school. *School-University Partnerships*, 4 (1), 56-64. Retrieved on October 31, 2016, from http://eric.ed.gov/?id=EJ915881.

Abstract: In this article, we provide a description of a unique model of teaching and learning, developed at an urban professional development school. We focus on an intensive collaboration between members of a high school mathematics department and one university faculty member, who collaborated to raise student test scores and build solidarity as a team. We describe the steady and committed manner in which all members worked to ensure improved student learning and create rich models for teaching, learning, and collaboration, identified as the heart of an effective professional development school.

Bottia, M. C., Moller, S., Mickelson, R. A., Stearns, E., & Valentino, L. (2016). Teacher collaboration and Latinos/as' mathematics achievement trajectories. *American Journal of Education*, 122 (4), 505-535.

Abstract: Latino/a students' low mathematics achievement is a pressing issue given their increasing numbers in the United States. This study explores the relationship between teacher collaboration and Latino students' math achievement, taking into account the great diversity of Latinos/as in America. Using multilevel growth models, we analyze Early Childhood Longitudinal Survey-K data from approximately 1,900 Latino/a students and find that teacher collaboration has, on average, a nonsignificant effect on the mathematics achievement growth of all Latino/a students between kindergarten and fifth grade. However, when analyzed separately, teacher collaboration is shown to have a positive relationship with the math academic trajectories of Latino immigrant students, while having a negative association with the math trajectories of Latino/a students who do not speak English at home.

Clark, R. (2013). Strategies employed by middle school principals successful in increasing and sustaining the mathematics achievement of African American students (Doctoral dissertation). Retrieved on November 2, 2016, from http://digitallibrary.usc.edu/cdm/ref/collection/p15799coll3/id/224630

Abstract: This study approaches the problem of African American mathematics achievement from a strength-based perspective, identifying practices implemented by middle school principals successful in increasing and sustaining the mathematics achievement of African American students. The study was designed to answer questions regarding both school-wide practices and those targeted directly toward achievement of African American students. Quantitative data was collected and analyzed for descriptive statistics through the use of a survey instrument sent to a purposeful sample of 67 middle school principals in California, followed by the collection of qualitative data through interviews with 4 principals. Several themes emerged from the data, including the use of structured teacher collaboration in several areas: the development of school culture and consistent expectations, pacing and planning of lessons and student products, developing formative assessments, and analysis of data. The development of positive relationships was another commonality, with principals indicating such relationships aided in the increase of student achievement through developing positive school culture, honest collaboration between teachers, and a feeling of inclusion for students in the instructional process. Although principals were selected for the study based upon above-average performance of African American students in mathematics, few of the strategies employed were targeted directly toward this group, with

principals focusing instead on quality first instruction and high expectations for all students. The findings of the study provide a framework of effective practices to be utilized by middle schools currently not experiencing similar levels of success in increasing mathematics achievement and closing gaps for African American students.

Davidson, C. (2006). Collaboration between ESL and content teachers: How do we know when we are doing it right? *The International Journal of Bilingual Education and Bilingualism*, 9 (4), 454-475. Retrieved on October 25, 2016, from http://hub.hku.hk/bitstream/10722/45447/1/130990.pdf?accept=3D1

Abstract: Partnership and the integration of language and content teaching in English-medium schools have long been active areas of research and inquiry in applied linguistics and TESOL. However, most researchers have tended to focus on methods and techniques to use in the classroom or on the analysis of the linguistic demands of the content areas. Much less attention has been paid to researching the process of co-planning and co-teaching and to supporting the evolution of the partnership between ESL and content teachers. This paper draws on questionnaire and interview data collected as part of a school-based professional development initiative in an English-medium school in Asia that focused on developing more collaborative relationships between ESL and content/classroom teachers in a large culturally and linguistically diverse elementary school. The paper begins with an analysis of some of the underlying assumptions in current conceptualisations of effective collaboration between ESL and mainstream/content-area teachers, then presents an emerging framework that draws on teacher talk and critical discourse analysis to describe and evaluate the stages of collaboration and the different levels of its effectiveness. The implications of this research for evaluating approaches to partnership and for setting realistic goals for professional development and institutional change will also be explored.

Goddard, Y. L., Goddard, R. D., & Tschannen-Moran, M. (2007). A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools. *Teachers College Record*, 109 (4), 877-896.

Abstract: Background/Context: A review of the literature demonstrates that schools are frequently called upon to improve by developing high levels of teacher collaboration. At the same time, there is a paucity of research investigating the extent to which teachers' collaborative school improvement practices are related to student achievement. Purpose/Objective/Research Question/Focus of Study: The purpose of this study was to review the literature and empirically test the relationship between a theoretically driven measure of teacher collaboration for school improvement and student achievement. Setting: The data for this study were drawn from students and teachers in a large urban school district located in the midwestern United States.
Population/Participants/Subjects: The population for this study came from the elementary schools in one large midwestern school district. Survey data were drawn from a sample of 47 elementary schools with 452 teachers and 2,536 fourth-grade students. Research Design: Hierarchical linear modeling (HLM) was the primary analytic method. Survey data were collected approximately 2 months before students took the mandatory state assessments, which provided the scale scores that served as dependent variables in this research. HLM accounted for the nested nature of the data (students nested in schools). This was a naturalistic study that employed secondary data analysis. There was no intervention, treatment, or randomization. Naturally occurring differences in teachers' levels of collaboration were measured, and statistical controls for school social context were employed. At the student level, the study employed controls for children's social and academic backgrounds. Data Collection and Analysis: Data were obtained from teachers and students in the sampled schools. Teacher data were obtained via a survey assessing teacher collaboration. Student data were obtained from the central administrative office of the school district for all students who

attended sampled schools during the year in which we surveyed teachers. Findings/Results: Results of HLM analyses indicate that fourth-grade students have higher achievement in mathematics and reading when they attend schools characterized by higher levels of teacher collaboration for school improvement. Conclusions/Recommendations: The authors suggest that the results provide preliminary support for efforts to improve student achievement by providing teachers with opportunities to collaborate on issues related to curriculum, instruction, and professional development. The authors also discuss the need for more research on the effects of different types of collaborative practices using more representative samples.

Goddard, Y. L., Miller, R., Larsen, R., Goddard, R. D., Madsen, J., & Schroeder, P. (2010). *Connecting principal leadership, teacher collaboration, and student achievement*. Online Submission, Paper presented at the Annual Meeting of the American Educational Research Association (Denver, CO, Apr 30-May 4, 2010). Retrieved on October 31, 2016, from http://eric.ed.gov/?id=ED528704.

Abstract: The purpose of this paper was to test the relationship between principal leadership and teacher collaboration around instructional improvement to determine whether these measures were statistically related and whether, together, they were associated with academic achievement in elementary schools. Data were obtained from 1,600 teachers in 96 elementary schools where principals are participating in a randomized control trial to assess the efficacy of a widely-disseminated professional development program for school leaders. Using structural equation modeling, we found a significant direct effect of leadership on teacher collaboration and a significant direct effect of collaboration on student achievement. Also, the indirect effect of leadership on student achievement through teacher collaboration was significant. These findings have implications for practitioners and researchers. An appendix provides: Shard Instructional Leadership and Collaboration Factor Scale Measurement Properties. (Contains 7 tables and 2 figures.) [The research reported here was conducted by the Education Leadership Research Center (ELRC) at Texas A&M University as part of the School Leadership Improvement Study (SLIS).

Gruenert, S. (2005). Correlations of collaborative school cultures with student achievement. *NASSP Bulletin*, 89 (645), 43-55.

Abstract: The purpose of this study was to investigate the salience of collaborative cultures relative to student achievement. School culture data was collected from the faculties of 81 schools in Indiana during the spring semester of the 2002-03 school year using survey methodology. The data from these schools provided scores on six factors found in the survey. These six factors were then correlated with student achievement to determine whether features of collaborative cultures tend to exist where high test scores were reported.

Harris, A. (2004). Distributed leadership and school improvement. *Educational Management Administration & Leadership*, 32 (1), 11-24.

Abstract: This article considers the relationship between distributed leadership and school improvement. Drawing upon empirical evidence from two contemporary studies of successful school leadership and recent studies of school improvement, it explores the extent to which distributed forms of leadership can contribute to school improvement. The article argues that the distributed perspective offers a new and important theoretical lens through which leadership practice in school can be reconfigured and reconceptualized. It concludes by suggesting that, while evidence would suggest that distributed forms of leadership can assist capacity building within schools which contributes to school improvement, further research is needed to confirm a relationship between distributed forms of leadership and improved student learning outcomes.

Jacobs, L. S. (2013). *Teacher perceptions on the effect of collaboration on student achievement.* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses.

Abstract: At the school site for this study, students have performed below acceptable district goals in math. Although research has indicated that effective collaboration can contribute to teacher learning, research on collaboration has often failed to address its effect on student achievement; therefore, the purpose of this project study was to examine teachers' perceptions about teacher collaboration and student achievement. In this exploratory case study, research questions focused on the effect of collaboration on student achievement, factors contributing to or hindering collaboration, the effects of implementing a collaborative model, and recommendations for improving collaboration. With a sample size of 17 teacher participants, data were collected using focus group interviews and individual follow-up interviews. Pattern matching was used to analyze data. Resulting themes indicated that although teachers thought it was too early to determine if the collaborative model would affect summative data, they did think that (a) collaboration improved student achievement, especially with regard to higher order thinking skills; and (b) collaboration worked when teachers committed to sharing ideas and working together and when they were permitted ample time to collaborate. Based on the data analysis, a 3-day training course on collaboration was developed. This project could encourage a change in the school's culture and result in improved student achievement and increased teacher collaboration, thus contributing to positive social change. These outcomes may result in the school effectively meeting the federal requirements of No Child Left Behind and, at the local level, meeting the Local Education Agency Implementation Plan goals.

Ketterlin-Geller, L. R., Baumer, P., & Lichon, K. (2015). Administrators as advocates for teacher collaboration. *Intervention in School and Clinic*, 51 (1), 51-57. Retrieved on October 31, 2016, from http://isc.sagepub.com/content/51/1/51.full.pdf+html.

Abstract: This column contends that administrators are responsible for constructing a culture of collaboration in their schools and that ultimately, the facilitation of collaboration affects students' academic achievement. Within the context of a leadership scenario, this article outlines the need for, function of, and logistical implementation of collaboration. Administrators can help teachers' collaborative instructional design and delivery efforts by focusing on collective expertise development and dissemination, implementation strategies, and the development of assessment expertise. Four tools are included to assist in guiding and sustaining collaboration to support the academic success of students with disabilities.

Kirp, D. L. (2013). Banding together: Union city's teachers and administrators work together to improve student achievement. *American Educator*, 37 (4), 14-21. Retrieved on October 31, 2016, from http://eric.ed.gov/?id=EJ1020950.

Abstract: For years, points out David L. Kirp, critics have lambasted public schools as fossilized bureaucracies run by paper-pushers and filled with time-serving teachers preoccupied with their job security, not the lives of their students. Yet, as this article describes, running an exemplary school system does not demand heroes or heroics, just hard and steady work. Kirp describes the efforts of the teachers and administrators of Union City, New Jersey, as an example of "Banding Together" to improve student achievement. Union City is a poor, densely packed community mainly composed of Latino immigrants expected to fail, yet pointing the way toward promising outcomes. How was this effected? The teachers state that the best explanation for their effectiveness is what they have learned--and keep learning--from their colleagues--that teachers improve in good measure because of the informal tutelage that the old hands give the newbies, the day-to-day collaboration, the modeling of good practice, and the swapping of ideas about what is worth trying

in their classrooms. The results of this rigorous effort: students scoring on the state's achievement tests that approximate the New Jersey averages; despite their hard-knock lives, successfully competing with their suburban cousins in reading, writing, and mathematics; over 90 percent graduation from high school; and three-quarters of them enrolling in college. Kirp concludes that success stories are to be found across the country, in communities that spend frugally on their students, as well as those that are lavishly funded, in big cities as well as rural communities, and in districts with black, Latino, and poor white students. These school systems have taken the same playbook, the same priorities, the same underlying principles, the same commitment to hard and steady work, and adapted these to suit their circumstances with success.

Moller, S., Mickelson, R. A., Stearns, E., Banerjee, N., & Bottia, M. C. (2013). Collective pedagogical teacher culture and mathematics achievement: Differences by race, ethnicity, and socioeconomic status. *Sociology of Education*, 86 (2), 174-194.

Abstract: Scholars have not adequately assessed how organizational cultures in schools differentially influence students' mathematics achievement by race and socioeconomic status (SES). We focus on what we term collective pedagogical teacher culture, highlighting the role of professional communities and teacher collaboration in influencing mathematics achievement. Using cross-classified growth models, we analyze data from the Early Childhood Longitudinal Study and illustrate that schools where teachers perceive the presence of professional communities and teacher collaboration foster greater mathematics achievement throughout elementary school. Furthermore, achievement gaps by race and socioeconomic status are lessened in schools with professional communities and teacher collaboration.

Moolenaar, N. M., Sleegers, P. J. C., & Daly, A. J. (2012). Teaming up: Linking collaborative network, collective efficacy, and student achievement. *Teaching and Teacher Education: An International Journal of Research and Studies*, 28 (2), 251-262.

Abstract: Improving student achievement through teacher collaboration networks is a current focus of schools in many countries. Yet, empirical evidence on the relationship between teacher networks and student achievement and mechanisms that may explain this relationship is limited. This study examined the relationship between teacher networks and student achievement and the mediating role of teachers' collective efficacy beliefs. Data were collected from 53 Dutch elementary schools. Using social network analysis and multiple regression we analyzed teacher survey and student achievement data. Findings indicate that well-connected teacher networks were associated with strong teacher collective efficacy, which in turn supported student achievement.

Ronfeldt, M., Farmer, S. O., McQueen, K., & Grissom, J. A. (2015). Teacher collaboration in instructional teams and student achievement. *American Educational Research Journal*, 52 (3), 475-514. Retrieved on October 31, 2016, from http://aer.sagepub.com/content/52/3/475.full.pdf+html

Abstract: This study draws upon survey and administrative data on over 9,000 teachers in 336 Miami-Dade County public schools over 2 years to investigate the kinds of collaborations that exist in instructional teams across the district and whether these collaborations predict student achievement. While different kinds of teachers and schools report different collaboration quality, we find average collaboration quality is related to student achievement. Teachers and schools that engage in better quality collaboration have better achievement gains in math and reading. Moreover, teachers improve at greater rates when they work in schools with better collaboration quality. These results support policy efforts to improve student achievement by promoting teacher collaboration about instruction in teams.

Ross, J. A., Hogaboam-Gray, A., & Gray, P. (2004). Prior student achievement, collaborative school processes, and collective teacher efficacy. *Leadership and Policy in Schools*, 3 (3), 163-188.

Abstract: Collective teacher efficacy refers to teacher perceptions that they constitute an effective instructional team, capable of bringing about learning in students. Previous research demonstrates that a school staff with a strong sense of collective efficacy is likely to generate high student achievement. This study of 2,170 teachers in 141 elementary schools used structural equation modeling to examine the antecedents of collective teacher efficacy. The study found that prior student achievement in grade 6 mathematics predicted collective teacher efficacy, as expected by social cognition theory. The study also found that school processes that promoted teacher ownership of school directions (shared school goals, school-wide decision making, fit of plans with school needs, and empowering principal leadership) exerted an even stronger influence on collective teacher efficacy than prior student achievement. School cohesion and support contributed to collective teacher efficacy, but only in domains in which the school had control over its directions.

Rubinstein, S. A. & McCarthy, J. E. (2016). Union-management partnerships, teacher collaboration, and student performance. *ILR Review*, 69 (5), 1114-1132.

Abstract: Using data from surveys, interviews, and student performance, the authors examine collaborative union–management partnerships between local union representatives, teachers, and school administrators working together in innovative ways to improve teaching quality and student performance. Based on data from 27 schools in a southern California school district, the authors find that the strength of formal union–management partnerships is a significant predictor of greater growth in student performance over time, and that this relationship is mediated by stronger educator collaboration at the school level, after controlling for poverty. The findings suggest that student performance can be significantly improved by institutional union–management partnerships and the increased school-level collaboration that results from them.

Salinas, E. C. (2013). *An examination of tri-level collaboration around student achievement using the gap analysis approach: School site leadership factors* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses.

Abstract: Using the Gap Analysis problem-solving framework (Clark & Estes, 2008), this project examined collaboration around student achievement at the school site leadership level in the Pasadena Unified School District (PUSD). This project is one of three concurrent studies focused on collaboration around student achievement in the PUSD that include the teacher level conducted by Carruthers (2013) and the central office administrator level conducted by Llamas (2013). The primary purpose of this project was to identify the knowledge and skills, motivation, and organizational challenges that contribute to PUSD's gap in accomplishing its organizational goal for collaboration around student achievement from the perspective of the school site leadership. Mixed methods were used to collect survey data from 34 participants and interview data for four participants to identify and validate the knowledge and skills, motivation, and organization root causes that may contribute to the PUSD's school site administrator role in achieving the District's goal. Findings show that in general school site administrators are highly motivated and have the necessary knowledge and skills to meet the goals of the district but are impeded by issues related to resources specifically time for professional development, creation of job aids, assessments, and intentional communication to encourage collaboration across the district. Based on the findings, solutions are offered to address these challenges. This project, along with its concurrent studies, demonstrates how various stakeholders can systematically apply the Gap Analysis framework to

address performance issues when implementing district-wide collaboration around student academic achievement.

Szczesiul, S. & Huizenga, J. (2014). The burden of leadership: Exploring the principal's role in teacher collaboration. *Improving Schools*, 17 (2), 176-191.

Abstract: Based on qualitative data collected over a 6-month period, this article examines how teachers' experiences of principal leadership practice influence their capacity to engage in meaningful collegial interactions during structured collaboration. Similar to previous studies, our findings confirm the limitations of leadership that relies primarily on structural changes to foster collaboration. Our findings contribute further to leadership research by presenting teachers' perspectives on why particular principal leadership practices matter to teacher collaboration and by illustrating how the principal's enactment of leadership practices influences teachers' sense of efficacy and motivation, both of which are critical to professional learning during collaboration.

Webb, N. M., Franke, M. L., Ing, M., Chan, A., De, T., Freund, D., & Battey, D. (2008). The role of teacher instructional practices in student collaboration. *Contemporary Educational Psychology*, 33 (3), 360-381.

Abstract: Prior research on collaborative learning identifies student behaviors that significantly predict student achievement, such as giving explanations of one's thinking. Less often studied is the role of teachers' instructional practices in collaboration among students. This article investigates the extent to which teachers engage in practices that support students' explanations of their thinking, and how these teacher practices might be related to the nature of explanations that students give when asked by the teacher to collaborate with each other. The teachers observed here, all of whom received specific instruction in eliciting the details of student thinking, varied significantly in the extent to which they asked students to elaborate on their suggestions. This variation corresponded to variation across classrooms in the nature and extent of student explanations during collaborative conversations and to differences in student achievement.

Wimberley, C. E. (2011). *Teacher collaboration and student achievement* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (Accession Order No. AAT 3490620).

Abstract: This study was conducted to explore the relationship between teacher collaboration and student achievement. The pedagogical model espoused by Howland and Picciotto (2003b) defined teacher collaboration as a pedagogy that involves two or more teachers who regularly discuss teaching and learning, including learning activities, lesson plans, assignments, pacing, course design, evaluating, and revising the program. Five hundred twenty three school districts were invited to be part of this study. Then, 100 public school districts were randomly selected from 201 responses to an online survey addressed to Professional Development Chairpersons in Missouri. School districts were divided into two groups, collaborative and non-collaborative. Collaborative school districts were distinguished from non-collaborative school districts as districts that used contracted time, or time embedded within the school day, for staff to collaborate. Non-collaborative school districts did not meet during contracted time; collaboration occurred during workshops, book studies, and planning during the school day. Analysis was also conducted to determine the effectiveness of collaboration taking place between both groups. Eighth grade student achievement scores in Communication Arts and Math from the 2009-2010 Missouri Assessment Program (MAP) were analyzed to determine the relationship between collaborative school districts and non-

collaborative school districts. Through the application of a t-test, a significant relationship was found between school districts utilizing contracted time for teacher collaboration and higher student achievement. Findings from the study should be useful in informing educators regarding the potential impact of utilizing contracted time for teacher collaboration.

Methods

Keywords and Search Strings Used in the Search
- Collaboration between teachers
- Collaboration between teachers and administrators
- Teacher behaviors and collaboration
- School improvement and collaboration
- Partnerships between teachers and administrators
- Teacher collaboration and student outcomes
- Collaboration among teachers and student achievement
- Teacher collaboration and student performance
- Collaboration and student achievement

Search of Databases
EBSCO Host, ERIC, PsychInfo, PsychArticle, Google, and Google Scholar

Criteria for Inclusion
When REL West staff review resources, they consider—among other things—four factors:

- **Date of the Publication:** The most current information is included, except in the case of nationally known seminal resources.

- **Source and Funder of the Report/Study/Brief/Article:** Priority is given to IES, nationally funded, and certain other vetted sources known for strict attention to research protocols.

- **Methodology:** Sources include randomized controlled trial studies, surveys, self-assessments, literature reviews, and policy briefs. Priority for inclusion generally is given to randomized controlled trial study findings, but the reader should note at least the following factors when basing decisions on these resources: numbers of participants (Just a few? Thousands?); selection (Did the participants volunteer for the study or were they chosen?); representation (Were findings generalized from a homogeneous or a diverse pool of participants? Was the study sample representative of the population as a whole?).

- **Existing Knowledge Base:** Although we strive to include vetted resources, there are times when the research base is limited or nonexistent. In these cases, we have included the best resources we could find, which may include newspaper articles, interviews with content specialists, organization websites, and other sources.