



High-quality collaboration benefits teachers and students

WHAT THE STUDY SAYS

Using sophisticated statistical analyses, researchers examined individual teacher-level and school-level collaboration to understand the nature and effects of teacher-to-teacher collaboration in instructional teams. When teachers engage in high-quality collaboration that they perceive as extensive and helpful, there is both an individual and collective benefit. High-quality collaboration in general and about assessment in particular among teachers is associated with increases in their students' achievement, their performance, and their peers' students' achievement.

Study description

The research study examined teacher collaboration practices in 336 Miami-Dade Public Schools between 2010 and 2012 and involved over 9,000 teachers. Researchers used teacher surveys to collect descriptive data about teachers' collaboration practices. Through statistical analyses using district- and school-level data about

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At a glance

The quality of teacher collaboration positively influences teacher performance and student achievement.

THE STUDY

Ronfeldt, M., Farmer, S., McQueen, K., & Grissom, J. (2015). Teacher collaboration in instructional teams and student achievement. *American Educational Research Journal*, 52(3), 475-514.

teacher characteristics, teacher value-added test results, school characteristics, and student achievement, researchers explored the interactions among multiple variables using multiple models to identify findings and explore appropriateness of alternative explanations.

Questions

The research study centers on two sets of questions. The first set, based on the descriptive study of the survey data, includes:

- What kinds of instructional collaborations exist in the urban school system studied?
- Do teachers perceive collaboration in certain instructional domains to be more extensive or helpful than others?
- How much variation in collaboration quality exists within and between schools?
- Is the quality of teacher collaboration associated with student achievement and teacher improvement with experience?

The second set of questions, based on the analytic study of the interaction among teachers, schools, and collaboration, addresses these questions:

- Do different kinds of schools have different kinds of instructional collaboration?
- Is the average quality of faculty collaboration associated with school achievement?
- Is a teacher's own collaboration quality or the average collaboration quality of her colleagues associated with her students' achievement?
- Do teachers improve at greater rates in schools with greater collaboration?

Methodology

Researchers employed two types of data: teacher survey data from a prior extensive survey about teacher collaboration and district and administrative data about teacher demographics, performance, role-specific indicators, experience, their student demographics, test scores, and school indicators.

WHAT THIS MEANS FOR PRACTITIONERS

Because many school and school system leaders and policymakers advocate and support teacher collaboration as a means to improve student achievement, this study is significant to understand more deeply how the nature and extent of collaboration, teacher characteristics, and school characteristics interact to affect student achievement. The results of this research study support the continuation of teacher collaboration that is focused, sustained, and perceived as helpful as a productive approach to increasing student success and teacher performance.

The study illuminates the importance of the Standards for Professional Learning (Learning Forward, 2011) within the practice of and conditions for teacher collaboration. The **Learning Communities** standard speaks to the impact of collective responsibility for student success, continuous improvement, and shared accountability. Sustained teacher collaboration about instructional strategies, curriculum, students, and assessment, as well as general collaboration is the primary vehicle for continuous improvement of teacher practice, for sharing accountability, and collective responsibility.

The **Leadership** standard addresses the role of leaders in advocating professional learning, creating support system and structures for continuous improvement, and developing capacity to lead and learn. Florida's standards for professional development specify that teachers are expected to participate actively in learning communities. Teacher collaboration requires leaders who are able to cultivate the capacity to collaborate about instruction, curriculum, students, and assessments, create and support instructional teams to maintain engagement in high-quality collaboration, and serve as an advocate of teacher collaboration.

While not specifically addressed in the study, it was evident that **Resources** such as time, staff, and materials were available for sustained teacher collaboration.

The **Data** standard addresses the use of educator, student,

and system data to plan, monitor, and evaluate the impact of professional learning. The district invested in developing a data system that links educator and student data for multiple purposes.

Teacher collaboration is a powerful **Learning Design**. This standard emphasizes using active engagement, appropriate learning designs, and application of theories and research on learning. Teacher collaboration is grounded in the social interaction theory of learning and aligns with research on communities of practice, relevance to practice, and collective practice.

The **Implementation** standard stresses sustained support, constructive feedback, and application of change research. This study's focus on teacher collaboration over a two-year period and its examination of the nature and extent of teacher collaboration substantiate the role of teacher-to-teacher continuous learning.

The **Outcomes** standard emphasizes the alignment of teacher performance and student outcomes as the content focus of professional learning and strong coherence among what students learn, what teachers learn, and school and school system goals. In this study, teacher collaboration focused on teachers' core responsibilities — instruction, curriculum, assessment, and student success.

Teacher collaboration, when practiced with a focus on instructional strategies, curriculum, and assessment particularly, has benefits for both teachers and students. Results are even more promising when the collaboration is extensive and perceived by teachers as helpful. Collaboration among teachers even influences the results of teachers who do not experience directly the same high-quality collaboration. Researchers conclude, "Student achievement gains are greater in schools with stronger collaborative environments and in classrooms of teachers who are stronger collaborators" (p. 512).

REFERENCE

Learning Forward. (2011). *Standards for Professional Learning*. Oxford, OH: Author.

Teacher survey data were extracted from over 9,000 surveys for a larger study of school leaders over two years with a response rate of 36% and 39% in 2011 and 2012 respectively focusing on questions related to the extensiveness and helpfulness of different kinds of collaboration within their instructional teams. A considerably smaller number of teachers was included in the full analysis of reading (667) and math (544) achievement due to the amount of available value-added data.

Researchers used multiple models and analyses to examine and dispute alternative explanations for their findings.

Analysis

Through statistical analyses of the survey results, researchers determined the types, extent, and degree of helpfulness of teacher collaboration. Four types of collaboration were identified: general (e.g. classroom management) and three instruction-

specific ones (instructional strategies and curriculum; students; and assessment). Quality of teacher collaboration is measured as teacher perception of the extent and helpfulness of collaboration.

Additional statistical analyses of the interactions among various teacher and school characteristics answered the research questions. Researchers employed multiple models to examine alternative explanations and to strengthen the potential for

making causal inferences about teacher collaboration and student achievement.

Results

Results of this study suggest that teacher collaboration has positive effects on teachers and their students. The majority of teachers surveyed (84%) indicated that they were a part of a team of colleagues that works together on instruction. Nearly all teachers (90%) report that their collaboration was helpful and the extent of their collaboration ranged from a mean score of 2.51 to 3.06 on a 4-point scale. Instruction-focused and assessment-focused collaboration were perceived as more helpful and extensive.

Collaboration about student work and classroom management was perceived to be less helpful and extensive.

School and teacher factors influence the quality and type of collaboration.

Teachers in

elementary schools, more so than in secondary schools, collaborated more frequently about instruction. Higher-quality collaboration is more common among female teachers than male teachers, particularly about instructional strategies, curriculum, and assessment.

In schools with more nongifted exceptional students, collaboration about instruction was weaker on average. Teachers in schools with larger enrollments had higher-quality collaboration about instruction and lower-quality collaboration about students. There were differences in the quality of collaboration among teachers of different races. Black, Hispanic, and white teachers, respectively, report decreasing collaboration quality.

Teachers with bachelor's degrees

as their highest degree collaborate more than teachers with other degrees. Teachers' years of experience was unrelated to most factors, although teachers with more than 15 years of experience reported significantly lower-quality collaboration about instructional strategies and curriculum. It is important to note that the study's design did not permit differentiating perceived quality from actual quality of collaboration.

All collaboration factors significantly and positively predict school-level math value-added, and general, instruction, assessment, and student collaboration had decreasing influence on school-level math value-added. All types of collaboration except about assessment significantly predicted school-level reading value-added. These results suggest, according to the researchers, that schools with "instructional teams engaged in better collaboration also have higher achievement gains in math and reading" (p. 500).

Similar results occur for teacher-level value-added in both math and reading. Teachers who participated in higher-quality collaboration had better achievement gains in math than those of teachers who experienced lower-quality collaboration. Additionally, not only were individual teachers able to increase math student achievement if they were engaged in better general collaboration and collaboration about assessment, but also if they worked in a school with better collaboration even if they did not participate in the same high-quality collaboration.

Teachers working in schools with better collaboration about students were better able to raise student math achievement. Teachers benefit from the quality of collaboration within their school even if they do not contribute to the collaboration themselves. In reading, collaboration about instructional strategies and curriculum was a positive predictor of value added.

Teachers' rate of improvement increases more rapidly if they work in a school with higher-quality collaboration than they would if they worked in a school with lower-quality collaboration. Teacher collaboration has strong and positive effects on student achievement, particularly when the collaboration is about assessment.

Limitations

The research team reports a number of limitations of the study. First, the study's measure of collaboration does not distinguish between the perceived and actual extent and helpfulness of collaboration as measured by self-report in the survey.

To measure if teachers working in schools with better collaboration improved at faster rates than peers working in schools with lower-quality collaboration, researchers held constant the value of school-level collaboration measured in 2011 was the same from 2010-2012. This may not have been true, yet it provided the opportunity to examine how collaboration influenced teacher growth over time, and simultaneously may not reflect actual conditions.

The study excluded teachers who perceived no value from collaboration in instructional teams. While the foci of this study was to understand the nature and effects of teacher collaboration, it would have been helpful to examine if teachers who perceived no value from collaboration had similar results if they worked with teachers who did engage in high-quality collaboration.

While the study's design does not permit causal inferences, researchers did apply additional statistical analyses to counter other potential factors affecting the relationships among teacher collaboration and student achievement. Doing so, while helpful to support the importance of their findings, may encourage readers to interpret the results as causal rather than correlational. ■

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