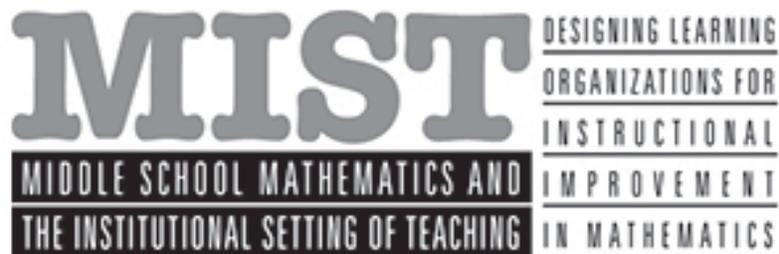




VANDERBILT  
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**District B Public Schools  
Feedback/Recommendation Report  
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## INTRODUCTION

The following report is based on the fourth round of data collection of the Vanderbilt University study of Middle School Mathematics and the Institutional Setting of Teaching (MIST). MIST is a five-year National Science Foundation funded project designed to support four large, urban districts, including District B, as they work to improve the teaching and learning of mathematics in the middle grades. Similar to the first three years of the study, our first step was to document any changes in District B's Theory of Action or plan for improving the quality of middle school mathematics instruction, with the ultimate goal of improving student learning and achievement. We documented District B's Theory of Action by conducting interviews with district leaders in the fall of 2010. A report describing our interpretation of District B's Theory of Action was submitted to the district on January 4, 2011. This report builds on the Theory of Action report by providing feedback about how District B's plan for improving middle grades mathematics teaching and learning is actually playing out in schools and classrooms.

We have recently completed the fourth annual round of data collection to document 1) the instructional practices and mathematics content knowledge of mathematics teachers in 7 middle-grades schools in District B and 2) the extent to which structures have been established in the 7 schools to support the ongoing improvement of mathematics teaching. Data collection over the past year has included the following:<sup>1</sup>

- 1) Interviews of the 12 district leaders, 7 principals, 4 assistant principals, 7 mathematics instructional coaches (MICs), and 32 teachers focusing on issues such as their understanding of the district's plans for improving mathematics instruction, their vision of high quality mathematics instruction and of high quality instructional leadership, their informal professional networks, formal opportunities to collaborate with colleagues, professional development (PD) activities in which they have participated, the people to whom they are accountable, the sources of assistance on which they draw, and the curriculum materials they use in the classroom.
- 2) Surveys of the 32 focal teachers in the study focusing on quantifying issues addressed in depth in the interviews.
- 3) Surveys of the 11 participating principals and assistant principals, and 7 MICs to document their instructional leadership in mathematics.
- 4) Video-recordings of two consecutive lessons involving a problem-solving activity for each of the focal teachers and MICs.
- 5) Video-recordings of select mathematics-focused PD sessions in which the interviewed teachers participated.
- 6) Video-recordings of select mathematics-focused PD sessions in which the interviewed MICs participated.

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<sup>1</sup> The findings presented in this report are based on the interview data collected in January 2011. The LMT assessments, surveys, and videos of teachers' instruction took place between February and April 2011 and have not yet been analyzed.

- 7) Assessment of the teachers' and MICs' mathematical knowledge for teaching (using instruments developed by the Learning Math for Teaching (LMT) project at the University of Michigan).

Over the past four years, District B has shown improvement in several areas. From 2007 to 2010, the district made significant gains in mathematics achievement each year, including a 20% increase in the proportion of eighth-grade students categorized as proficient or above on the state-wide mathematics assessment. In addition, our data has shown that principals, assistant principals, MICs, and teachers are increasingly able to articulate a vision of high quality mathematics instruction that is aligned with the district's vision; although relatively few teachers and MICs, and none of the school leaders we interviewed, had developed a deep understanding of what the district's vision would look like if implemented with fidelity.

While District B continues to make progress, our analyses indicate that there are two important areas where there is still considerable room for improvement. First, teachers' depth of mathematical knowledge for teaching did not improve between 2007 and 2009 and remained below the national average, even though the district has been investing heavily in professional development (PD) for teachers. Second, we have seen little improvement in the quality of classroom instruction during this period, as measured by the Instructional Quality Assessment (IQA). Teachers generally introduce tasks that are potentially of high-cognitive demand during the "launch" phase of CMP2 lessons, (e.g., they are using CMP2 tasks that are challenging and require students to provide evidence of their mathematical reasoning). However, teachers typically reduce the level of rigor of the tasks significantly as they implement them. For example, teachers may lower the cognitive demand of tasks by suggesting that students follow a standard procedure to solve the problem. In other cases, the teacher might skip the more challenging parts of the task that require students to explain their reasoning. Furthermore, few teachers are engaging their students in high quality classroom discussions that are likely to support their understanding of key mathematical concepts. Discussions in which the teacher presses students to explain and justify their reasoning and to make connections between solutions are a crucial phase of CMP2 lessons. High quality discussions, as envisioned by the developers of CMP2, can support all students' development of both conceptual understanding and procedural fluency. We therefore consider it problematic that in most classrooms we have observed, discussions either were not taking place or were 'show and tell' sessions in which students were not prompted to justify their solutions or make sense of how others solved tasks. Discussion in which students make a series of unrelated presentations with little support from the teacher are of limited value in supporting their learning.

In summary, while middle-school student performance on the state-wide assessment has been increasing, we have not seen improvements in either teachers' knowledge of mathematics for teaching or the quality of classroom instruction that would enable more students to meet District B's goal that all students have opportunities to learn through engagement with a rigorous curriculum coupled with high-level academic expectations. The district and the schools we are studying are implementing a number of supports to

help teachers improve their knowledge and practice, including PD, teacher collaboration time, and coaching. However, these supports as they are actually being implemented have not been effective in supporting instructional improvement. While scores on state-wide assessments have improved over the past few years, we suspect that student success on the new state-wide assessments will depend more heavily on the middle-school mathematics teachers' ability to implement the CMP2 curricula as envisioned by its developers.

In this report, we will describe how the supports for teachers', MICs', and school leaders' learning are playing out on the ground and will make recommendations for ways that District B might adjust these supports and their implementation to make them more effective. We focus first on teachers' opportunities for learning afforded through PD, curricular tools, and collaboration. We then report findings and recommendations around the work of MICs. Finally, we will discuss supports for principals' and assistant principals' development as instructional leaders, and make recommendations in this area.

## **SUPPORTS FOR MIDDLE GRADES MATHEMATICS TEACHERS**

### ***Professional Development for Teachers***

One of District B's main strategies for supporting teachers' improvement of their instructional practices is content-focused teacher PD. Nearly all the 32 focal teachers in our study attended Annual District Day PD, half attended Middle School Math PD, and about a third attended Optional Saturday PD. While attendance was high at mandatory Annual District Days, two-thirds of the teachers we interviewed reported that this PD was not helpful in advancing their instructional practices because it was not specific to mathematics or to teaching the curriculum.

Participation in Middle School Math PD was down considerably from last year with about half of our teachers indicating that they attended. Approximately half of the teachers who attended reported that the PD was useful in planning for upcoming CMP2 units and for considering potential student solutions, while the other half of teachers said that they did not find the PD helpful because it focused on materials and resources that were similar to previous years. It is important to note that investigating potential student solutions to a CMP2 task is an activity that is likely to support the development of instructional practices that are necessary to implement CMP2 well.

Only a minority of teachers in the study attended Optional Saturday PD. Teachers who did attend, however, found sessions on Sheltered Instruction, foldables, and Interactive Notebooks to be helpful. Although the content of these sessions appealed to participants, these types of activities are unlikely to support more effective implementation of CMP2 (e.g., maintaining the level of challenge of tasks when they are implemented in the classroom). Activities that are tied more directly to implementing CMP2 in the classroom would have greater potential for improving instructional practice (e.g., differentiating a cognitively demanding mathematics tasks to support ELL students).

Seven beginning teachers in our sample attended the week-long PD for new teachers. Overall, teachers found this PD to be directly relevant to their classroom instruction. In

this PD, teachers participated in observing model lessons, solving tasks, and unpacking the CMP2 curriculum. The teachers also reported that this PD provided resources that they could use for planning throughout the year. We suggest that these types of activities could be even more effective in influencing instruction if MICs followed up on them throughout these teachers' first year in the classroom.

### ***Enhanced Pacing Guides, DIAs, PAAs***

The provision of Enhanced Pacing Guides (EPGs) is a second key strategy for supporting teachers in improving their instructional practices. The Enhanced Pacing Guides were developed to a) align CMP2 with the state standards, b) serve as a pacing guide for teachers, c) suggest ways to differentiate tasks for ELL, special education, and gifted students, and d) provide District Interim Assessments (DIAs) to gauge student learning. Similar to last year, most of the teachers we interviewed (approximately three-fourths) use the Enhanced Pacing Guides primarily for pacing and for checking which state mathematics standards they should be teaching. We found that very few teachers report using the Enhanced Pacing Guides for ideas on how to differentiate instruction for SPED, ELL, and gifted students.

All of the teachers in our sample reported using DIAs to assess student learning. Similar to last year, some teachers indicated that some of the DIAs are not well aligned with CMP2 and that some are ahead of the pacing guide. Teachers from all of the schools in our sample report analyzing DIA data and indicated that their goals in doing so are to determine which specific state mathematics standards they need to reteach and to identify students who need tutoring. While these uses of DIA data are informative for targeting students for tutoring, a systematic review of these data could also be used to improve the overall quality of instruction. For example, teachers could plan lessons based on the specific state math standards that students struggled with in previous years.

The district intends that teachers and school leaders will use Periodic Authentic Assessments (PAAs) to assess students' proficiency during each six-week grading period. PAAs provide a common indicator of student learning that can be discussed by teachers, MICs, and principals across the district. We found little evidence that PAAs are being used as intended. This year, we found that implementation of PAAs varied both across the schools and within schools. Some teachers used the PAAs as homework assignments whereas other teachers used them as in-class assessments. Teachers at only two of the schools in our study reported that their principals collected PAAs for analysis during monthly principal meetings. Overall, PAAs are not being implemented consistently in the seven schools and do not appear to be serving the goals intended by district leaders. The district might need to reiterate to teachers and school leaders the purpose of the PAAs and how they can be used to improve instruction.

### ***Time for Teachers to Collaborate***

The provision of time for mathematics teachers to collaborate during the school day is not an explicit district strategy for improving instruction; however, we are providing feedback because teacher collaboration is a potentially important support for instructional improvement. Mathematics teachers have the opportunity to collaborate both during

mathematics department meetings (i.e., meetings that involve all mathematics teachers) and during grade-level meetings (i.e., meetings that involve only same-grade mathematics teachers).

For mathematics department meetings, there was some variation in the frequency of these meetings, with most occurring at least weekly. MICs typically lead these meetings. Similar to last year, we found that the majority of meeting time is spent on data analysis in order to identify specific state standards in mathematics that need to be retaught and to identify students who need tutoring. Although these activities are important for helping struggling students, they are unlikely to support teachers' more effective implementation of CMP2. Teachers in a few schools reported engaging in activities such as reviewing student work that do have the potential to support teachers in improving implementation of CMP2. However, there is great variation in both the frequency and the depth in which they discuss student work.

Similar to the 2009-2010 school year, all schools in our study provide time for mathematics teachers to plan in grade-level groups. In some schools, MICs lead these meetings, whereas MICs or teachers lead the meetings in other schools. The main activities that teachers reported were planning for upcoming instruction, discussing pacing, sharing instructional strategies, and sharing assessments. As was the case of mathematics department meetings, teachers also reported that data analysis is a common activity and is used primarily for planning re-teaching and for identifying students for tutoring.

### ***Recommendations***

The supports provided over the past four years to support the implementation of CMP2 have led to wide spread compliance among teachers in using this challenging curriculum. However, the current supports need to be adjusted if the district is going to push beyond a relatively superficial implementation of CMP2 by supporting all middle-grades mathematics teachers, MICs and principals in developing deeper understandings of the core principles of the curriculum. Therefore, our first recommendation is that the district continues to provide PD for teachers to support the development of high quality mathematics instruction that aligns with CMP2, including Annual District Days, Middle School Math PD, Optional Saturdays, and new teacher PD. Based on our analysis of video-recorded lessons taught by the participating teachers, we believe that district PD would be more effective in supporting instructional improvement if it focused on helping teachers identify the cognitively demanding aspects of tasks in CMP2 and on how maintaining the rigor of tasks through the three phases of the lesson: launch, explore and summarize. For example, a theme cutting across all forms of math teacher PD in the 2011-2012 school year might be launching CMP2 tasks to support all students' productive engagement while maintaining the cognitive demand of the tasks. PD in subsequent years might focus on whole class discussions in the summarize section of the lesson, with an emphasis on identifying the key mathematical ideas that should come to the forefront in the discussion, questioning to press for conceptual explanations from students, and helping students make mathematical connections.

We recommend that the content of the math-related PD in which MICs, principals, and assistant principals participate be tightly aligned with the focus of math teacher PD. For example, if PD for teachers, school leaders, and MICs all focus on the same aspect of instruction (e.g., launching CMP2 tasks effectively, conducting high quality whole class discussions during the summarize phase of lessons), then MICs and school leaders would be in a better position to support and press teachers to improve these specific aspects of their instruction. Furthermore, if MICs led PD with the same focus in Annual District Days, then they would be better positioned to enact the coach cycle with teachers and to provide feedback specific to these aspects of instruction. In addition, school leaders would better understand what good instruction looks like and might provide feedback that presses teachers to improve these aspects of instruction.

### **MATHEMATICS INSTRUCTIONAL COACHES**

In District B's ToA, MICs are the primary school-based resource for supporting teachers in improving their instructional practices. The MICs' responsibilities include: (1) providing one-on-one instructional support to other teachers in their classrooms (e.g., implementing the two-week coaching cycles with teachers, modeling lessons, co-teaching), (2) acting as a resource for the principal in matters of (mathematics) content (e.g., meeting with principals on a weekly basis), (3) delivering PD specific to middle-grades mathematics to groups of teachers on Annual District Days, and (4) assisting in leading meetings between groups of mathematics teachers (e.g., helping to lead regularly scheduled mathematics department meetings). In order to do this work, MICs need to develop expertise both as mathematics teachers and as coaches. This year, some schools received additional funding (Algebra Grant<sup>2</sup>) that enabled them to provide a full-time mathematics coach.

#### ***MICs' Work with Teachers***

A majority of MICs support teachers one-on-one through co-teaching, modeling, observing, and conducting coaching cycles. This year, nearly all MICs reported spending time in teachers' classrooms observing instruction. However, only a minority of the MICs in our study provide feedback after observing a lesson. In addition, MICs model instruction for teachers or co-teach with teachers only occasionally, and then primarily with new teachers. This school year, approximately half of MICs reported enacting the coaching cycle with one or two teachers in their schools. In addition, a high proportion of the interactions that teachers report having with MICs center on classroom management and student engagement. Although this is important, especially for new teachers, these types of conversations are not sufficient to support the effective implementation of CMP2. A small proportion of the interactions between MICs and teachers are more likely to support the deeper implementation of CMP2, including discussing different types of student solution strategies, posing productive questions, and examining student work to look for student misconceptions. Unfortunately, conversations of this type are not common and occur inconsistently across schools and within schools.

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<sup>2</sup> For the sake of simplicity, we treat the Algebra Grant Coaches and the MICs as a single group and refer to them as MICs, since they serve in very similar capacities in their coaching responsibilities.

As has been the case in previous years, the MICs mention extra responsibilities in addition to supporting teachers such as compiling and analyzing data, and running tutoring programs for their schools. These additional duties reduce the amount of time that MICs can spend working with teachers in their classrooms and directly assisting them in improving their instruction.

### ***Professional Development for MICs***

In the districts' ToA, MICs are intended to act as a more accomplished colleague who can support other math teachers in improving their instructional practices. Unfortunately, the ability of the MICs to support their colleagues is limited by their lack of knowledge and expertise in teaching CMP2. MICs are only slightly more expert than other mathematics teachers in their understanding of high quality mathematics instruction, knowledge of mathematics for teaching, and instructional practices. This is not surprising given the limited PD that MICs have received in recent years specific to teaching CMP2. When the district first created the MIC position before the 2006-2007 school year, MICs received training on CMP2 from the curriculum developers at Michigan State University. This training familiarized the MICs with the new curriculum and provided them an opportunity to examine the types of instructional practices needed to implement the curriculum effectively. However, in the intervening four years, MICs have received only limited PD to support their understanding of high quality CMP2 instruction. For the past several years, time set aside for PD in the fall semester has focused largely on preparing for Annual District Day PD. As there has been some turnover of MICs in the last four years, only two of the seven currently participating in our study received the PD on CMP2 four years ago.

The district continues to recognize that MICs need support in developing practices as coaches as well as teachers. MICs have received coaching PD, which most MICs found helpful because it equipped them with questions to ask teachers. This year, MICs serving as Algebra Coaches received additional PD, including opportunities to role-play difficult situations that arise as they work with teachers. Activities of this type simulate MICs' actual practices with teachers and are likely to be productive in supporting the coaches. Role-playing allows MICs to practice and receive feedback on the types of questions that they might ask teachers as they work with teachers on specific instructional practices.

In the past, the district has intended that district mathematics specialists engage in the coaching cycle with MICs in order to support coaches' enactment of the cycle with teachers. Few MICs indicate they have engaged in this particular activity with mathematics specialists. However, all MICs indicate they often go to their assigned mathematics specialist when they have questions about CMP2 units, testing, or if they need assistance supporting a particular teacher. Support from the mathematics specialists, specifically assistance that is directly related to supporting teachers, is critical for MICs to continue to develop as coaches.

### ***Recommendations***

Our findings indicate that the district needs to clarify the role of the MIC and to consider the types of supports that these coaches need if they are to support teachers in

implementing CMP2 effectively. Our second recommendation is that the district needs to clarify the role of the MIC with both school leaders and the coaches by it making explicit that coaches should spend the majority of their time assisting either groups of teachers or individual teachers with instruction in their classrooms. School leaders should be encouraged to identify other staff members to analyze student data and run tutoring programs. This is especially important for the 2011-2012 school year when additional MICs will become full time coaches.

Our third recommendation is that the district provides increased support for MICs' development. This support should involve PD that aims to support their development as both mathematics teachers and coaches. As we recommended previously, the focus of PD for teachers, MICs, and school leaders needs to be aligned. We recommend that PD for MICs be directly tied to the teacher PD (e.g., launching CMP2 tasks, leading effective whole class discussions). If the MICs continue to be responsible for providing district-wide PD, they will need extensive support in order to be more expert than the participating teachers on the specific aspects of instruction on which the PD focuses. The mathematics specialists should continue to provide this support, but their work with MICs should focus more directly on key aspects of high quality mathematics instruction and how to support teachers. When possible, mathematics specialists should work with MICs in their schools on coaching (i.e., modeling coaching, co-coaching).

For the sake of example, suppose that teacher, MIC, and school leader PD during the 2011-12 school year focuses on launching CMP2 tasks effectively as proposed previously. The goal of PD for MICs would then be to enable them to engage teachers in activities that focus on this phase of lessons during teacher collaborative meetings at their schools. In addition, the PD would aim to support MICs in modeling, co-teaching, and providing feedback on this phase of lessons. We conjecture that it might be feasible for MICs to become more expert on specific, focal aspects of CMP2 instruction if they receive extensive, targeted support.

We have found that MIC turnover is an issue in a few schools. Developing the expertise to support other teachers takes several years. In addition, it often takes two years for MICs to gain an adequate level of trust with teachers. It is therefore important for the district to work with school leaders in selecting MICs who are likely to remain in the position for several years and have the potential to develop the requisite expertise as mathematics teachers and coaches. In addition, the district should consider how it will support the MICs who are new to the position in developing expertise as CMP2 teachers (e.g., attending PD offered by the curriculum developers) and as coaches.

### **SCHOOL LEADERS**

District B's Theory of Action emphasizes the role of school leaders (i.e., principals and assistant principals) as instructional leaders. In this role, school leaders are expected to support teachers' development of high quality instruction in their classrooms. This requires that the school leaders themselves have developed an understanding of what comprises high quality mathematics instruction. Their responsibilities as instructional leaders include working closely with MICs and department chairs in an assigned content

area, observing classrooms regularly, attending department meetings, engaging in walkthroughs, and knowing student performance data.

### ***School Leaders and Accountability***

When principals<sup>3</sup> were asked what they are held accountable for, principals said that the secondary directors assess their performance based on a set of seven criteria on an evaluation rubric. However, almost all of the principals we interviewed said that student performance on the state-wide assessment and the AYP rating of the school are important criteria. All school leaders are expected to oversee at least one of the key content areas; principals indicated that they are expected to oversee the content area(s) with the lowest scores. School leaders are also expected to know student performance data of all subgroups. Almost all of the principals said that they are also held accountable for ensuring that the curriculum is implemented with fidelity, to be in classrooms on a regular basis, and to know what is taking place in their classrooms (which we report on in a subsequent section).

It is clearly important for school leaders to monitor student achievement. However, such a strong focus on test scores has led school leaders to communicate expectations to MICs and teachers that appear to be negatively affecting the implementation of CMP2. For example, as previously reported, school leaders are asking MICs to spend a significant amount of time analyzing data and coordinating tutoring programs for struggling students. These tasks reduce the amount of time that MICs can work with teachers to improve their instruction. In addition, holding school leaders primarily accountable for student test scores influences school leaders' expectations for the types of activities in which teachers should engage during collaborative time. As reported above, the most common activities in teacher collaborative meetings are data analysis, identifying specific state standards in mathematics that need to be retaught, and identifying students who need tutoring. While it is important to provide additional supports for struggling students, these activities are unlikely to support teachers in improving the quality of instruction by implementing CMP2 with increased rigor.

### ***School Leaders' Visions of High Quality Mathematics Instruction***

For school leaders to be effective instructional leaders in mathematics, they need to have a vision of high quality mathematics instruction that aligns with the district's goals. If principals have a clear understanding of what CMP2 instruction entails, then they can provide feedback that will press teachers to improve the quality of their instruction. Over the past four years, some aspects of principals' and assistant principals' visions of high quality mathematics instruction (e.g., the role of the teacher) have become more aligned with the district's vision. However, the majority of school leaders' understanding about what constitutes a quality mathematical task or a high quality classroom discussion has not improved. This year, we found that some of the assistant principals that we have interviewed have made greater improvements, probably because they received more content-focused PD.

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<sup>3</sup> Assistant principals were not consistently asked about what they are held accountable for and thus we are not able to include this information in the report.

### ***Monitoring Classroom Instruction***

All of the school leaders reported observing classroom instruction regularly, but the frequency and duration of observation varied greatly across schools. Some observations were as short as a few minutes while others lasted the whole class period. School leaders also reported providing feedback after observations; however, the content of the feedback seems unlikely to support teachers' development of instructional practices that are compatible with the district's goals. Our school leader and teacher interviews indicate that the most common areas of feedback are classroom management, student engagement, and pacing with only a few school leaders also providing feedback around core aspects of instruction such as questioning strategies. While it is important for school leaders to provide feedback on issues of management, we suspect that additional press on key aspects of mathematics instruction is necessary for teachers to recognize the need to effectively implement CMP2.

### ***Professional Development for School Leaders***

Professional development is a key district strategy for supporting school leaders' development as instructional leaders. While principals participate in monthly meetings, they report that these meetings do not typically focus on curriculum or content. Most principals indicated that the meetings tended to focus on school management issues and administrative tasks. The majority of principals indicated that they want more PD that focused on content in order to deepen their understanding of high quality math instruction.

Assistant principals who monitor mathematics instruction in their schools reported receiving regular mathematics-focused PD, with sessions focusing on the new state-wide assessment, instructional coaching, lesson plans, CMP2 lessons/content, data analysis (e.g., value-added and disaggregation), and instructional strategies (e.g., questioning techniques). In these sessions, a district specialist modeled a lesson from CMP2 and the assistant principals worked through a cognitively demanding mathematics task. Overall, the assistant principals found the PD to be useful.

### ***Recommendations***

As we have indicated, principals and assistant principals need to develop a deeper conception of high quality math instruction if they are to support instructional improvement effectively. Our fourth recommendation is therefore that school leaders receive PD that focuses on a small number of high leverage instructional practices (e.g., launching CMP2 tasks effectively, conducting whole class discussions). The goal of this PD should be to 1) improve their visions of high quality instruction, 2) help them to support the work of the MIC, and 3) enable them to press for instructional improvement by communicating CMP2-specific instructional expectations through constructive feedback to teachers. As indicated above, this PD should be aligned with teacher and MIC PD and should focus on the same instructional practices. We also recommend that MICs participate in this PD with their administrators in order to foster the development of shared responsibility for instructional improvement and to allow them to develop their vision of high quality instruction together. As many assistant principals reported finding

the PD on instructional coaching to be very effective, District B may want to consider providing that session for all school leaders that are responsible for mathematics.

## **CONCLUSION**

District B has attempted to implement a number of supports to help teachers improve their knowledge and practice, including PD, teacher collaboration time, and coaching. However, our findings suggest that these supports as they are actually being implemented have not been effective in supporting instructional improvement. We have not seen evidence of growth in teachers' knowledge or practice since CMP2 was first implemented. Our data indicate that a primary emphasis on managing student achievement (i.e., analyzing data to identify which specific state standards in mathematics to reteach and which students need tutoring) has disrupted the districts' efforts to support teachers, MICs, and school leaders in improving their instructional and instructional leadership practices.

The intent of the recommendations we have made is to improve the implementation of supports for improvement in the quality of instruction in which the district has invested heavily over the past four years. We recommend that PD focus on a small number of high-leverage teaching practices that contribute to the effective implementation of CMP2 by maintaining the rigor of tasks through the three phases of lessons: launch, explore and summarize. For example, all forms of PD in the 2011-2012 school year might focus on launching CMP2 tasks in ways that enable all students' to engage in rigorous mathematics without reducing the challenging aspects of tasks.

The content of the mathematics-related PD in which MICs and school leaders participate should be tightly aligned with the focus of teacher PD, thereby enabling MICs and school leaders to support and press teachers to improve their instruction in a coordinated manner that builds on teacher PD. For example, when MICs enact the coach cycle with teachers, they would be prepared to provide feedback specific to the same aspects of instruction addressed in the teacher PD. Similarly, school leaders would better understand what good instruction looks like and might provide feedback to teachers that press them to improve particular aspects of their instruction.

Given the very real tension between managing student achievement and supporting teachers to improve the quality of their instruction, it is important for the district to consider its expectations for school leaders. The district should clarify that a focus on achievement data, while crucial, should not come at the expense of instructional improvement. The challenge for the district is to give school leaders and MICs explicit guidance about how managing student achievement should be coordinated with efforts to implement CMP2 effectively so that the two work together. When considering the supports in which District B has already invested heavily for teachers, specifically time for teachers to meet and work with the MIC, the district should make it clear that the emphasis is on instructional improvement through ongoing work on instructional practices specific to CMP2.