

Impact of Principal Institutes

Horizon Research, Inc.

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Submitted to: William Haver, Principal Investigator
Virginia Commonwealth University
Department of Mathematical Sciences
Virginia Commonwealth University
Richmond, VA 23284-2014

Introduction

In a 2010 case study of Virginia’s MSP, the authors describe school principals as “the ultimate determiners of the work of the Mathematics Specialists in their school.”¹ To cultivate greater support among these school-based leaders, workshops (referred to as Principal Institutes) were held for middle school administrators during 2011–12 as part of the current NSF-funded MSP grant.² The Institutes included a two-day session in October, followed by a one-day session in March, and culminated with another two-day session in June (five days in all). In addition, project leaders, with co-sponsorship from the Virginia Math and Science Coalition, offered a set of three-day workshops for principals in schools outside the MSP grant. Each was comprised of a two-day session in October/November, followed by a one-day session in January/February. The Institutes were “oversubscribed” within one day of advertising, prompting the Virginia Department of Education to fund an additional six offerings. In all, the Institutes will reach 270 principals instead of the 90 originally proposed.

Both types of Institutes (the three- and five-day) sought to build administrators’ capacity in two areas primarily: (1) understanding what good mathematics instruction looks like; and (2) understanding administrators’ roles as mathematics instructional leaders.

This brief report provides feedback on the Institutes, drawn largely from interviews conducted by Horizon Research, Inc. (HRI) with six principals who attended the five-day sessions. In addition, HRI interviewed three principals from the three-day Institutes and analyzed survey responses from over 70 participants in these Institutes.

Principals’ Views on the Overall Quality of the Institutes

Institute activities sought to provide participants with a grounded, practical, and relevant professional development experience. For example, videos, activities, and presentations provided participants with actual scenarios involving instruction, the math specialist, and administrative support strategies. Large- and small-group discussions allowed administrators to explore mathematics standards, curriculum, and instruction, and to articulate roles and responsibilities for themselves and the specialists. Readings, “take-away” assignments, and homework encouraged principals to reflect more deeply on these topics in general and within their own school context.

All of the interviewed administrators found the Institutes highly worthwhile. They consistently praised workshop facilitators for creating a professional development experience that was engaging, informative, and stimulating. Activities sometimes took participants out of their comfort zone, but did so in a risk-free environment, where administrators engaged in open discourse and were free to disagree and agree. Administrators noted that various themes (e.g.,

¹ *The Use of State Policy to Support Teacher Leader Programs: The Case of the Virginia MSP (2010)*. N. Schiavo and B. Miller. Education Development Center, Inc.

² These workshops were based on a series developed in a related project for elementary school principals (Researching the Expansion of the K–5 Mathematics Specialist Program into Rural School Systems).

vision, standards, language of mathematics, student-engaged instruction) were effectively woven throughout the workshops and revisited over time, thereby strengthening the overall message. Activities in which participants shared ideas with their Institute colleagues and other educators were judged to be particularly valuable. Discussions helped administrators pare down their vision, make mental notes of issues they had not considered previously, reflect on strategies for avoiding (or dealing with) potential pitfalls, and validate current practices. There was very little in the workshops that administrators did not find valuable. They variously described the activities as “well thought out,” “fun and engaging,” and “cannot think of a single activity that wasn’t good.”

Impact of Institutes on School Administrators

The Institutes sought to prepare school leaders for supporting stronger mathematics programs and, where applicable, a math specialist in their school. This section of the report looks at the impact of the workshops on administrators’ understanding of standards-based mathematics and their understanding of their roles as leaders to support mathematics instruction.

Increasing Administrators’ Understanding of Mathematics Instruction

A major goal of the workshops was to develop administrators’ capacity to recognize and lead standards-based, student-centered mathematics programs in their schools.

What administrators perceived they gained from the workshop depended on prior background and experience. For principals who were less familiar with the elements of standards-based mathematics instruction, interview data suggest that the workshop had a considerable impact on reshaping their views in this area. One of these administrators described changes in her vision for instruction this way:

It’s more about getting students to struggle with the math. What I discovered through the workshop is that we as educators, for the sake of time, of planning, of staying on the pacing chart, we tend to give our students too much information to work with instead of helping them think through [the problem]. We need to let the kids struggle a bit. It’s okay. Give them the skills and the foundation to work with, but we don’t have to make it too easy for them. It’s okay for them to think. For me, that was the biggest message, the major take-away.

Two principals who attended one of the three-day Institutes described a new understanding of mathematics instruction this way:

True mathematical understanding lies at the intersection of content and process. What constitutes mathematical thinking, actually completing math problems and discussing process. Teacher-facilitated, student-centered learning. [Questionnaire response]

Students need to have opportunities to work through and maybe even struggle through some authentic mathematical tasks and that a task had to be developed in the proper way for students to get the most out of it. And that... student to student discussion was going to be just as important as this teacher-student-teacher-student, we’ll give them the

knowledge, they'll spit it back out at us. It was more an inquiry approach, a discovery approach, the idea that students needed to talk about their thinking and tell other students how they arrived at an answer and that everybody might have come at it at a different way and we can learn from each other. [Interview response]

Several Institute sessions provided time for administrators to develop a vision for mathematics instruction. For administrators whose schools did not have an explicit vision prior to the workshop, these activities underscored the idea that it was important to have clear expectations in this area. One principal said:

I never really thought in terms of establishing a vision for a specific curriculum, and I really like the idea of thinking about math in this particular way... What I would have said the first day [for my vision] was that children should be good problem-solvers. It's quick, it's easy, it's a pat answer, it's not wrong. As I went through the program and a lot of self-reflection opportunities, I was able to come up with something a little bigger, a little richer, a little deeper—where I said: offer a program where children have multiple opportunities to solve problems, to work collaboratively, to struggle with problems in order to gain confidence. But I wouldn't have said that in the first meeting.

Many administrators judged activities on the Standards of Learning (SOLs) to be among the most valuable for deepening their understanding of mathematics instruction, describing them as “eye-opening” or “an epiphany.” Said one:

One of the best activities we did was when we unpacked the Standards. I kind of [rolled my eyes], thinking that we were just going to restate the Standard. In the activity they had us do, we looked at some of the [language] and at specific vocabulary to see what the Standard is really getting at. I thought the Standards were a lot more self-explanatory than they are. I have always looked at them very simplistically. [But] it's not just about the Standards. It's about good instruction... [and] what is the Standard trying to get at, what is the deeper concept running through the Standard. It was really an epiphany for me...As an administrator, I was thinking that [the activity] won't be a big deal, and we saw that it was tough.

On several occasions, administrators were asked to solve a mathematical problem. Administrators noted that the exercises deftly illustrated that there are multiple ways of solving a problem and reinforced the idea that “math is not necessarily a static, rote process, that there are tens, if not hundreds, of ways to get the right answer.” These administrators also made connections between their own learning experience, the ways that students learn, and the role of the teachers and the math specialist in this process. Two administrators commented:

One of the keys in doing that is you get to see that there's more than one way to get the answer. Teachers that force students to do it “my way because these are the steps you have to take”—we are missing the point totally with that....So it was exciting to me. I had to explain my thinking and now I see the value in letting students do that. Let them think.

Let them fight through it. If a teacher can duplicate that for their students, I think they'll see the excitement like they've never seen before. [participant in a 5-day Institute]

I think it gives you an opportunity to put yourself in the position of student and get a sense of ...how the student is processing tasks, and what the tasks should look like for students, and look at where, if students are not successful with the task, what might be causing the lack of success... You really have to come at the task from a diagnostic point of view in many instances. And I think completing a task gives you a better way of understanding how students might be completing tasks and why they are solving a problem in the manner that they're solving it. [participant in a 3-day Institute]

Overall, interview data suggest that the workshops achieved their goal of educating administrators about the elements of standards-based mathematics instruction. Comments consistently indicated new knowledge and growth in this area, or an affirmation of existing knowledge.

Developing Instructional Leaders to Support Mathematics

This section looks at the impact of workshops on developing administrators' understanding of their roles as instructional leaders to support stronger mathematics programs. Interviewed administrators believe that, as school leaders, they are uniquely positioned to cultivate a vision for high-quality mathematics instruction. Data from the interviews also suggest that they see a clear role for themselves in this area. For example, one administrator described a workshop assignment in which she was to rate each math teacher's instruction on a standards-based continuum. The administrator asked her math specialist, assistant principal, and instructional coordinator to engage in the same exercise. The process helped her articulate a vision for standards-based instruction and ensure that key players in her school shared that vision. In her words:

You can't ask teachers to do something unless you have a reason for it. It goes back to [how] the workshop forced me to plan a vision for my math department and what do I want it to look like? It caused me to talk with my instructional leadership team about what that really was. A couple of them did not know. So, it was a good conversation and this whole process forced me to share with my staff, so now it can become part of what we do here. That assignment of going back [to the school] and doing some standards-based observations, and pulling in my other staff leaders, doing some professional development with them and we looked at our charts and... [there were] no discrepancies in where we thought teachers were. So then we went in groups and observed classrooms together using the same tool and then we'd talk about it. So now I've got other people who are evaluating math instruction in my building, looking for the same thing.

In describing what they took away from the three-day workshops, three principals noted:

Looking at math instruction as a collaborative effort—students, teachers & administration [resonated]. [I have] a new understanding of the role of the principal as not just a supervisor, but as a coach. [questionnaire response]

What principals need to look for during classroom observations—student learning, mathematical thinking, having continuous mathematical conversations with teachers, actually doing math problems. [questionnaire response]

I've got a new rubric that I use when I go in now and I look at teachers teaching a math lesson. I'm using more of the one that we got at the workshop and letting them self-evaluate what they think and then I evaluate what I think. And then we meet together and we talk about what we've seen, why they feel one way, why I might feel a different way, why we agree on the same pieces, and then what we can do to make them stronger, what do they feel that they need, and how can I help them. [interview response]

A questionnaire administered after the second day of the three-day workshops asked principals what questions they still had. Their responses suggest the Institute engaged participants in thinking of themselves as mathematics instructional leaders. Two wrote:

How can I, as a principal, support and motivate teachers as we work to improve mathematics instruction?

*How can I best help teachers implement a few baby steps to improve math instruction?
How can I best help teachers teach higher-level thinking skills?*

Administrators noted that the workshops had expanded, or reaffirmed, their convictions about the critical role of principals in supporting the math specialist and mathematics programs more generally. Administrators who had had a specialist prior to the workshop planned to take a more proactive role in collaborating with the specialist. In each of these cases, the workshops had expanded the principals' understanding of standards-based instruction and, therefore, their capacity to "speak the same language" as the specialist. This ability to communicate about mathematics instruction prompted administrators to see an expanded leadership role in supporting, and advocating for, the specialist.

The workshops helped administrators see the importance of their roles in providing logistical support for the specialist and math teachers. For example, administrators had created office space and adapted schedules to ensure that the specialist would have both the time and place for meeting with teachers. One administrator, whose specialist would be teaching as well as coaching, arranged the specialist's teaching schedule to free her during grade-level planning periods. Another administrator had gained a greater awareness about the need for "carving out time" during the school day for grade-level math teachers to create "a true learning community."

Most of the schools already had designated grade-level planning periods during the school day and anticipated that specialists would work collaboratively with teachers during this time. Across schools, principals (or another designated administrator) planned to be active participants in these meetings to provide visible support for the specialist. Said one principal, "I'm going to be at team time—as a spectator, a listener, as support. It'll be awkward because teachers aren't used to seeing me in that role, but we've committed to being at meetings at least once a week. It will speak volumes." Other principals were already acting in this capacity (e.g., attending grade-level meetings, observing classes) and planned to continue this level of involvement.

A primary goal of the five-day workshops was to enhance administrators' understanding of the role of the mathematics specialist. All of the interviewed administrators expressed a clear vision for how the specialist would work with teachers. Even principals who had worked with specialists in their schools before the workshops reported that they had reexamined the specialist role (and the ways they could support them) in light of what they had learned at the workshops.

Specialist roles and responsibilities mentioned by administrators were extensive. They expected specialists to observe classroom instruction; co-teach lessons; model teaching strategies; provide one-on-one feedback to teachers; participate in grade-level meetings to discuss standards and instruction; develop common assessments with teachers, analyze the data, and adapt/develop lessons; meet with administrators on a regular basis to share feedback and challenges; and work with special education teachers on mathematics teaching strategies. These instructional roles envisioned for the specialist were consistent across the six interviews. Administrators' comments further suggested that they believed specialists had the training and background to ensure their competency in the instructional realm.

Interview data also suggest that the workshops contributed to administrators' grasp of the complexity of the specialist's roles—beyond the instructional component. While specialists were variously expected to “lead change,” “be the content specialist,” “figure out needs and strengths,” and “make good decisions,” the more complex piece of the puzzle was building relationships. Said one principal: “Our [specialist] is strong, she knows her stuff. She's going to be a star in the field, but [you need] strategies on how to change people's mindsets and how to get people on board.”

Administrators viewed this aspect of the specialist role as an integral part of the job. They also saw that building credibility would require balance, skill, and discretion on the part of both the specialist and administrators. One commented:

One of the biggest things that I found to be valuable in [the workshop] was that even though I have an instructional mindset around math instruction and I have the administrative capacity to put things [in place], I'm really understanding the dilemma that the coach is in...They're not an administrator, but they're not a teacher either, so they teeter in the middle. [It's a matter of] not compromising that piece so we can get the best out of both worlds. I feel like I've done all the ground work that I can for that [piece]. Now she's got to go in and she's got to have the personal skills. She's got to win them the rest of the way. I've been with these teachers for four years and I work side by side with them. But I'll have to allow her time to figure them out herself.

As these comments suggest, the workshops contributed to administrators' understanding of the delicate and multifaceted nature of the specialist's job. All of these administrators expressed the need for the specialist to build credibility among teachers and be attentive to relationship-building to ensure the success of the instructional component of the job. All of the administrators also saw a clear role for themselves in this process.

Summary

The Principal Institutes sought to better prepare participants to be mathematics instructional leaders in their schools. Activities educated participants about standards-based mathematics and the roles that administrators and specialists play in promoting this kind of instruction. HRI's in-depth interviews suggest that the Institutes accomplished their intended goals. Administrators reported gaining a more precise vision for mathematics instruction in their schools and a firmer grasp of the kind of leadership needed to support the math specialist—proactive, collaborative, and based on a shared, explicit vision for both instruction and the specialist role.

Administrators consistently described workshop activities as informative, practical, collegial, challenging, and highly engaging. Videos, presentations, and discussions all appeared to serve the participants well for enhancing their ability to recognize good mathematics instruction—where students are actively engaged, use multiple activities, “talk” the language of math, and explain the mathematical processes they are using. Interactions with workshop colleagues were considered of the utmost value: discussions allowed administrators to explore topics in more depth, learn from the experiences of others, and reflect on the implications of these lessons for their own school.

Interviews revealed that school leaders were already applying what they had learned in the workshops. Those having previous experience with a specialist in their school were providing more active guidance and support—beyond “lip service.” Administrators new to the specialist program had advocated heavily during the past year to build a receptive environment for the incoming specialist.