

Supporting Professional Development of Middle School Mathematics Teachers: The Effect of a Mathematics Coach on Fostering Teacher Growth

Abstract

This action research project followed the experiences of three teachers at Washington Middle School (WMS) and their new mathematics coach, Wendy, as they navigated their work together to support their ongoing professional development. Data was collected through a variety of sources, including surveys, interviews, observations, and artifacts, and then organized in a triangulation matrix with the emerging themes. Although Wendy effectively assisted teachers in navigating the structures and systems within a diverse school district and helped establish a space for teachers to continuously reflect on their individual practice, structural challenges within the school at times inhibited Wendy's ability to support the ongoing professional growth of the mathematics teachers. The absence of a clear job description for the role of the mathematics coach at the school led to unmet expectations for Wendy which resulted in a difficult transition into her new teacher leader role. Completing this action research study allowed me to witness Wendy's transition to becoming a new math coach and the challenges that come with working with a group of teachers within a large department as well as make sense of my own experience of accepting a new position as a math teacher at WMS by following Wendy's experiences of taking on a new identity as an educator.

Relevance

At the outset of this study, I was curious about how Wendy was supporting teachers in implementing an instructional framework called Complex Instruction (CI) (Cohen & Lotan, 1997). However, as I began collecting data, I found that CI was not as dominant a theme across our math department as I had anticipated. Therefore, I altered my research focus to encompass the broader context of how teachers were accessing Wendy's time and expertise. By altering my research questions, I was able to gain a wider perspective of how teachers were making use of the new professional development structure of a full-time mathematics coach. This shift in research focus also allowed me to follow how Wendy made sense of her new role and her work with teachers and administrators.

Research Questions

How do professional development structures at a public middle school – specifically the introduction of a math coach – affect the growth and teaching practices of math teachers?

- How do math instructors at Washington Middle School make use of the math coach's time and expertise to further their practice?
- How does the math coach perceive and experience her work with teachers and administrators vis-à-vis her goals?

Methods: Instruments and Procedures

Data from the following sources were compiled and reorganized into a triangulation matrix under the emerging themes: *Fall interviews, interim reflections, final interviews, survey results, observations and field notes, and artifacts.*

Findings

- Navigating Systems and Structures
- Cultivating Discussion and Reflection
- Challenges of Facilitating Professional Development for Teachers
- Difficulties in Coach's Transition to Her Role

Implications

Completing this action research study allowed me to:

- Witness Wendy's transition to becoming a new math coach and the challenges that come with working with a group of teachers within a large department.
- Make sense of my own experience of accepting a new position as a math teacher at WMS by following Wendy's experiences of taking on a new identity as an educator
- Observe both Wendy and myself as we wrestled with determining and accepting our new identities as educators. For both of us this process required letting go of some of our expectations of our new roles so that we could refocus our efforts to best support the ongoing student and teacher learning at WMS.

Unanswered Questions

This action research study was originally designed with two additional sub-questions that were not fully answered through its findings. The final two research questions were designed to explore how the math teachers at Washington Middle School made use of the following professional development structures to promote their own growth and sharing of best practices:

- 1) The Complex Instruction (CI) professional learning community (PLC)
- 2) Any other ongoing professional development supported by the school or district

Next Steps

- Tracking and following how the members of the Complex Instruction PLC make use of two release days to aid in their continued professional development around CI in order to continue implementing this instructional framework into their classrooms.
- Following Wendy as she works to make plans for the next school year to help create systems and structures within the math department that support ongoing teacher collaboration and sharing of best practice.