

# Supporting Mathematics Teaching and Learning through a PDS Partnership

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# The Beginning of the Partnership

- Prior PDS relationship at the school
  - Projects about literacy and low SES students
- School district support
  - Drew had started working with district leaders to support mathematics teaching and learning
- Teacher interest and buy-in

# The Beginning: Torrieann's Goals

- Use a problem solving approach to teaching mathematics
- Connecting mathematical learning to real world situations
- Meet the needs of individual learners with smaller group size and a smaller student:teacher ratio

# The Beginning: Drew's Goals

- Supporting mathematics teaching and learning
- Supporting use of standards-based mathematics curriculum
- Researching teachers' efforts to improve their mathematics teaching and learning
- In-class support during mathematics teaching

# Various Types of Support

- Grade level support
  - Access to curricular units
  - Book study on curricular units
  - Co-planning lessons
  - Discussion of curricular units
  - Created lessons that aligned with Investigations to meet standards

# Various types of support

- Grade level support
  - Supported teachers using new materials
  - Helped develop rigorous assessments to use for pre & post tests
  - Provided needed manipulatives

# Various Types of Support

- Classroom support
  - Model lessons (whole lessons and portions of lessons)
  - Co-planning lessons
  - Co-teaching lessons
  - Assessed & documented student learning
  - Discussion: feedback after lessons, determining how to modify instruction

# Classroom Support

- I was able to meet the needs of specific students by providing students with more individual attention and varied learning activities
- The feedback provided after lessons informed and strengthened my instruction for future lessons

# Impact of Partnership on Teaching

- Supported Best Practices by modeling how to integrate problem solving in all areas of mathematics
- Provided needed manipulatives for student learning and engagement
- Modeled discussions in mathematics which taught me how to use communication in this subject

# Impact of Partnership on Teaching

- Mathematical Tasks
- Use of resources (manipulatives, technology)
- Questioning
- Student communication

# Impact of Partnership on Students

- Students received more individual attention in smaller groups
- Students were taught how to communicate their understanding of solving problems
- Students saw another role model using and applying math

# Year Two: Needs and Goals

- This year's goals: Use a standard's based curriculum and document student learning through pre and post assessments
- This year's needs: identify essential standards and create rigorous pre and post assessments

# Year Two: Focus on Assessment

- District and school has focused heavily on Professional Learning Communities
  - Identify specific performance-based goals and outcomes at the beginning of a unit
  - Teachers create common assessments
    - Pre- and post-unit assessments
  - Use assessment to inform instruction and provide additional learning opportunities for those who need it

# Assessment: Related Efforts

- In Fall '08 teacher candidates analyzed student data from pre- and post-unit assessments
- Provided 2<sup>nd</sup> grade teachers with:
  - A detailed analysis of student performance
  - Recommendations for future instruction
- Project is continuing this spring

# Year Two: Faculty provided more distal support

- Used knowledge of current and future standards to help develop rigorous assessments
- Provided feedback and support for implementing a new curriculum
- Shared resources: activities, websites, assessments, etc.

# Year Two: Student teacher

- I taught and supported my student teacher in using hands on math
- Shared discussion strategies to get students to communicate about their learning
- Planned with him to create student-centered instruction

# Next steps

- Courses continued to be taught on site
  - Assessment
  - Research & Analysis
    - Capstone covering differentiation, management
- Work with student teachers
  - Up to 16 in the building (about 40% of the classes)
  - School faculty would supervise and mentor student teachers

# Questions and Contact Information

- Questions?
- Contact information
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