

# Developing a Culture of Inquiry/Discourse Mindsets Using Math Curriculum

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## **Background That Led to Your Inquiry:**

Therefore, the purpose of my action research was to begin a journey with a culture theme that turned into growing teacher leaders to share the inquiry/discourse mindset. As I was growing a positive, nurturing culture, I realized I didn't have enough hours in the day to also push-in and coach my teachers in the "inquiry/discourse mindset".

The last several years of my teaching career, I coached and peer modeled best practices in Inquiry Math/Discourse for not only Lake Street teachers but Crown Point district teachers and some from surrounding school corporations. I am a building leader who now pushes in to model for my teachers but would like to pass this on to a few building level teacher leaders/coaches who are excellent math teachers. Those teachers have the "discourse" mindset and can help foster that in all our classrooms.

## **Statement of Your Wondering:**

With this purpose, I wondered how do I develop and grow teacher leaders in inquiry/discourse mindsets using math?

What role can a principal play in supporting this work?

## **Methods/Procedures:**

To gain insights into my wondering, I read "How Rich Is Your Classroom Discourse" AMLE Magazine, November 2014. Discussed and continue to discuss with teachers and have math teacher leaders model. "Effective Mathematics Teaching Practices" was shared with all teachers and math coaches have/will help all put into practice. Principles to Actions, Ensuring Mathematical Success for All, NCTM (book) will be used as a reference to get this initiative off the ground. It is our ongoing book study.

The next quote was and continues to be done as a trial, an experiment to inform principal understanding, from teacher feedback on norms and their delivery to inform her understanding of the best way to develop teachers in math.

"Math coaches and principal will train teachers the norms (procedures) on how to engage in active listening, address ideas versus individuals, and respectfully disagree/question. Role-playing appropriate and inappropriate actions can give students a better understanding of their expected role during classroom talk. Also help develop a culture that fosters rich discourse, this helps students appreciate the processes to get there versus simply the production of right answers. We value students strategically thinking about, discussing, clarifying, and elaborating on ideas rather than having someone simply state the correct answer in order to save time".

## **Stating Your Learning and Supporting it with Data:**

As a result of analyzing my data, important things I learned include:

Many teachers in my building understand inquiry/discourse mindsets. They all want to be a part of this leadership opportunity. Giving teachers these opportunities frees me up to concentrate on our culture and continuous improvement in that area. This started out as a school culture action research for me that turned into a two year action research for my teachers and me as a team.

We will continue our book study – Principles to Actions, Ensuring Mathematical Success for All (NCTM book). New this year were our Meetings for Learning on Wednesdays which started as a culture generated initiative and next year we will devote many to this inquiry study and implementation. Step by step information was shared on how to start the planning and implementation of this project (see below)

Steps to use with strategically selected math question to reveal student understanding and inform teacher instruction:

#### Step 1 - Teacher Planning

- Identify the question/task for instructional use. (TOPS cards, questions from IDOE etc.)
- Identify the specific math standards you want revealed from the question/problem.
- Anticipate likely student responses to question/problem.

#### Step 2 - While students are working in pairs/teams

- Monitor students' responses to the tasks.
- Identify student responses that reveal the learning standards you identified and significant misconceptions.
- Sequence the student responses to be displayed in a specific order revealing your purpose. i.e. least efficient method to most efficient method, level of concept understanding.

#### Step 3 - Whole class discussion

- According to the teacher determined sequence of student response, select particular students to present their mathematical work during the whole-class discussion.
- Have students ask questions, explain, discuss the responses
- Connect different students' responses, connect the responses to key mathematical ideas, and connect strategies and methods to more efficient procedures, as appropriate.

#### Step 4 - Formative Assessment

- Provide students a question to work alone that reveals their understanding of the math standards.
- Assess student learning and plan interventions.

Data was collected in a few ways:

- Meetings for Learning notes/journal collection - several weeks
- Pre/Post Survey Collection - pre survey was given to all teachers, post will be given at the end of this cycle
- Kept a journal of my thoughts and reflections about teacher comments, questions, and my responses - ongoing
- Lesson plans incorporating inquiry/discourse lessons - this school year and will continue into next school year

Book study will continue (I will develop a handout to focus the group)

Articles will be shared with teachers as I continue my research, "How Rich is Your Classroom Discourse?" etc.

Analysis of 2017 and 2018 math data to see if this new mindset impacts student scores

Ongoing conversations/Meetings for Learning with teachers as we develop this mindset in all subject areas

### **Providing Concluding Thoughts:**

As a leader I have grown in releasing leadership to my teachers. I know, with confidence, that my teachers, when empowered, can and will step up to do professional development, enrich themselves through self-study and continue the "Lake Street Way" of protecting teaching and learning time.

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### **References:**

Principles to Actions, Ensuring Mathematical Success for All; National Council of Teachers of Mathematics; 2014; Library of Congress Cataloging-in-Publication Data; [www.nctm.org](http://www.nctm.org)  
How Rich is Your Classroom Discourse?; Jelani Jabari; AMLE Magazine, November 2014