

Progress Report – Winnetka Mathematics Program Evaluation

Miriam Sherin, James Lynn

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PURPOSE & PROCESS

The purpose of this memo is to provide an update on the status of the mathematics program evaluation that we are undertaking. Between February and June, 2016, we engaged in the following tasks:

Review of math curriculum materials Grades 1-8.

- Materials provided by district.
- Introduction to district math program at Math Leadership Team meeting

25 observations of full math lessons; teachers volunteered to participate

- Grades 1-3: four observations per grade
 - two at Crow Island, one at Hubbard Woods, one at Greeley
- Grade 4: five observations
 - two at Crow Island, two at Greeley, one at Hubbard Woods
- Grades 5-8, two observations per grade
- Conference with each teacher before and after observation

Interviews and Focus Groups

- Discussed goals for and experiences with math program at classroom, school and district levels with stakeholders
- Eleven interviews, one with each principal, one with each math facilitator, one with district math facilitator
- Five school-based teacher focus groups, with a subset of teachers from each school
- Two parent focus groups, one with parents of elementary school students, one with parents of middle school students

Professional Development Observations

- Observation of Math Leadership Team meeting
- Observation of Collaborative Learning Team meetings at 1st, 5th, 6th grade levels and combined 7th-8th grades.

To gain a more complete understanding of instruction at Grades 5-6 we will conduct four additional classroom observations in Fall 2016, two at Grade 5 and two at Grade 6. This need was determined as we were in the midst of analyzing our data over the past two weeks and realized that we had a lower observation ratio at Grades 5-6 (40% of teachers observed) than at Grades 7-8 (66% of teachers observed). At Grades 1-4 the observation ratio is 40% (17 of 42 teachers observed) but because of the high number of total observations we believe we have the information needed to describe instruction at the elementary level.

PRELIMINARY FINDINGS

Curriculum & Materials

- *Does the content build on itself appropriately over time with respect to mathematics concepts and skills?*
- *Do materials align with goals of Common Core with respect to the Standards for Mathematical Practice?*
- *Do materials require students to engage in substantive mathematical thinking, problem solving, and communication (appropriate cognitive demand/rigor)?*

We are in the process of several analyses around these materials. In particular, we are examining the relationship between the KUDs and the Common Core State Standards for Mathematics (CCSSM). We are also examining the ways in which teachers blend the use of core curriculum materials with supplemental materials, including published resources and teacher-developed activities.

Our review of the curriculum resources is ongoing. We were provided with grade level materials for Grades 1 -8. The materials consisted of sets of KUDs (what students are expected to know, understand, and do) and a Scope and Sequence outlining the major units of study across the year for each grade level. We were also given copies of the core text for each grade level (*Investigations* for Grade 1-5, *Connected Mathematics* for Grade 6, and *McDougal Littell* for Grades 7-8) as well as a range of supplemental materials used at the different grade levels.

Instruction

- *How demanding is the content of the lessons?*
- *To what extent do tasks maintain intended cognitive demand when implemented?*
- *What kind of attention is given to students' thinking?*
- *Can every student access the content? Is challenge and support evident in the classroom? (Differentiation)*
- *How do teachers foster classroom discourse communities?*

A central component of our evaluation is classroom observations. Prior to each observation, we met with the teacher for an orientation to the lesson. We also met briefly with the teacher after the observation to discuss what took place. An important focus of the classroom observations was to assess the ways in which students engaged in meaningful mathematics activities and were supported in their learning. Because we are conducting additional observations in the fall, we will present our analysis of instruction in the final report.

Our analysis of the interviews and focus groups is ongoing. A few observations at the current time include the following. First, stakeholders share many of the same goals for students' learning of mathematics, that it be meaningful, useful, and engaging. At the same time, stakeholders expressed a range of views as to whether current differentiation practices are meeting students' learning needs in mathematics. This is an area that we are examining in our analysis.

Assessment & Communication

After speaking with administrators, teachers and parents, we believe the district would benefit from additional communication regarding students' progress in mathematics. With this in mind we offer one recommendation, at this time, regarding the development of student assessment materials. The district is currently engaged in an initiative to develop and identify assessments that can be used to measure student growth and achievement in mathematics. In particular, the district aims to assess students' understanding of mathematics content, ability to engage in math practices as outlined by CCSSM, and students' dispositions toward mathematics. We expect that increasing mechanisms for feedback concerning student progress in these areas will help teachers continue to align instruction to students' need and provide valuable information to parents concerning students' progress.

We recommend the use of multiple data sources that together paint a picture of student growth and achievement. This should include both classroom level assessments and district level assessments. At the classroom level, assessments could be developed by teachers or math facilitators, or drawn from curriculum materials. They can include both written and verbal tasks. Teachers and facilitators might find it useful to leverage the benchmarking approach outlined in the *Investigations* teacher materials in which student performance is distinguished as "meeting" "partially meeting" or "not meeting" a particular benchmark. To be clear, our point is not that teachers should necessarily use these assessment, but rather that the benchmarking approach is one that might be useful in communicating student progress.

At the district level, in order to make meaningful comparisons across the district and over time, we recommend the use of previously tested and validated assessments. For this reason, we do not recommend the use of teacher-developed materials for district-level assessments. A quality example of such assessment includes the Mathematics Assessment Resource Service (MARS) tasks which we understand the district is already exploring for Grades 3-8. Another is the Student Attitude Survey (<http://www.kaputcenter.umassd.edu/>).

Professional Learning

- *To what extent is there a focus on improving teacher skills and capacity to implement the articulated curriculum and support student learning?*

We wish to make one additional recommendation at this time. The district has a valuable resource for mathematics in the mathematical facilitators. Across the district, the facilitators are engaged in a range of important work. However, our discussions with and observations of the work of math facilitators have also raised questions for us about the focus of their work. The math facilitators are deeply committed to supporting and improving the teaching and learning of mathematics within the particular schools in which they are placed. At the same time, extensive district level work and the changing nature of the facilitator role place heavy demands on facilitators. In particular, the district has engaged in a number of initiatives around the math program over the past five years, often beginning new ones while existing initiatives are ongoing. Our sense is that the Math Leadership Team (MLT) would benefit from refocusing their efforts on a few key areas in which to work. In particular, we recommend that the central focus of facilitators' work be to support the needs of teachers at their schools.

FINAL REPORT

Upon completion of the additional classrooms observations in September, we will be prepared to present the final report to the School Board. This report will include a more comprehensive analysis of our observations and findings. It will also include program highlights and recommendations for consideration to improve the quality of the math programming. We will be available to answer questions from the School Board and staff.