A.5 PMP Math Narrative

Overview

The following section details specifics regarding the Performance Management Plan for Math.

Basis for Setting Predicted Baseline Figures

Standardized test performance data for FY 2011 for the four public district schools and one public charter school within the demographic area and including the anticipated population of students, was averaged and used to predict baseline figures. However, we will open with grades K-2 and our students will not enter Hirsch Academy with SAT-10 or AIMS data as a baseline. For this reason, we chose to work from historical data for similar students in the target population. Working from the Education Evaluator tool on the Arizona Charter Schools Association (ACSA) website we used the average percentage of students passing on the AIMS assessment. The four district schools demonstrated math passing rates ranging from a low of 45.5% to a high of 66.4% passing. The charter school reported a 27.3% math passing rate for students in Grades 3-8 and Grade 10. The state average is 61% passing. Significant to us was the score for Supai Middle School with 45.5% passing the AIMS in math. This data supports our reasoning for bringing school choice and our strong conceptual and skill mastery-based math program of instruction to this target population beginning in Kindergarten.

Singapore Math addresses the deficit in math education often found in American schools by focusing on deep understanding of number sense and taking skill development to mastery before moving on. Students understand the "why" of math rather than just the "how". We believe that our program will not only increase math student achievement at the elementary school level but, given time to build strong foundations, will also have a significant impact on middle school math achievement for those students who choose to remain at Hirsch Academy through the 8th grade and for those students who may choose to return to their neighborhood middle school. It is our intent to provide our students with an excellent K-8 math education to allow for higher-level math instruction in high school to be solidly college and career ready.

Singapore Math students learn to 1) understand the problem, 2) devise a plan to solve it, 3) carry out the plan, and 4) look back and analyze the reasonableness of the solution, whether there is an easier method to find the solution and then use this knowledge to solve other problems. The inclusion of the eight Mathematical Practices of the CCSS for Mathematics explicitly expects for such understanding to be developed within the structure of delivery of content. Singapore Math explicitly addresses the same premise through the Singapore Curriculum Framework. With Mathematical Problem Solving at the center of the framework there are five major components addressed: Processes, Skills, Attitudes, Metacognition.

Hirsch Academy will use formative and summative assessment data to provide ongoing professional development for our teachers on best practice to effectively inform math

instruction in the classroom. Initial teacher training on the use of Singapore Math instructional materials will be provided by SMARTTraining, LLC. Students are tiered for tutoring assistance.

Plan for Monitoring the Implementation of the Action

The overall structuring of the strategies and action steps of the PMP was heavily influenced by TeamCFA's experience at Pioneer Prep: CFA. As mentioned in previous sections, Pioneer Prep: CFA was able to grow from a D to a B in the state's A-F Accountability Letter Grade in just one academic year. The lessons learned through the experience at Pioneer Prep: CFA – an emphasis on high-quality effective instruction, rigorous curriculum, and a data-driven focus on teaching and learning – were incorporated into the PMP of Hirsch Academy: CFA.

The Math PMP includes concrete evidence of meeting the action steps laid out in the plan. A checklist will be created to include the evidence for Strategies I-IV. An example of an item on the checklist would be as follows:

Math PMP Strategy I:

Action Item 1
___ All hiring paperwork; including interview notes.

Action Item 2
___ Purchase order showing that Singapore Math has been ordered.
___ Inventory report showing that Singapore Math has arrived.

The Core Knowledge (CK) Implementation Rubric provides a planning tool to assist schools. This rubric helps schools identify whether CK implementation is "emerging", "developing" or "exemplary". The full text from the rubric is used in the PMP the first place it is used to assess CK implementation. Assessed areas on a detailed rubric are described as follows:

- ✓ Planning:
  Planning tools (i.e. Curriculum Plan and Domain Maps) are developed and used to guide instruction.

- ✓ Content:
  The Language Arts, History, Science, Math, Visual Arts, and Music domains identified in the Core Knowledge Sequence.

- ✓ Coherence & Context:
  Coherence entails arranging topics in a logical order (e.g. using filters such as chronological order, prerequisite knowledge) that enables students to build knowledge and vocabulary.
  Context refers to cross-curricular planning. Integrating cross-curricular

connections (e.g. sayings & phrases and science biographies) in related domains.

- ✓ Cumulative Nature of Content:
  Understanding that the topics in the Core Knowledge Sequence are introduced in early grade levels and build in complexity in later grades. In addition, reflecting on this when planning instruction (e.g. identifying the prior knowledge students should have on a topic and activating that knowledge in the lessons).

- ✓ Professional Community:
  Teachers collaboratively (e.g. grade-level teams, interdisciplinary teams, etc.) develop plans.

- ✓ Approach to Elementary Level Math:
  A systematic mathematics program is in place and it is implemented in a coherent fashion. Students also have the opportunity to hear and use domain-specific vocabulary as well as general academic vocabulary relative to the domain.

- ✓ Approach to Elementary Level ELA:
  A systematic English Language Arts (ELA) program is in place and implementation assists students in learning and applying phonetic knowledge. Students have the opportunity to listen to and read a variety of high-quality literary and informational texts.

- ✓ Effective Teaching:
  Teachers exhibit knowledge of content along with an array of pedagogical strategies to deliver quality instruction.

- ✓ High Expectations:
  The school staff embodies and communicates a "growth-mindset" to motivate students to success.

- ✓ Resources:
  Teachers have (access to) and use quality resources to support Core Knowledge Implementation.

- ✓ Leadership:
  Leaders embody the Core Knowledge mission and support staff with implementation.

- ✓ Commitment:
  Understanding that Core Knowledge is the central curriculum and making every effort to align other initiatives so teachers can implement it with fidelity.

- ✓ Community:
  The school families are informed and involved with Core Knowledge implementation.

- ✓ Ongoing Process:
  Planning and the implementation of the Core Knowledge curriculum is not a "one time event", but a process that needs to be continually refined.

- ✓ Professional Growth:
  The professional staff seeks and participates in professional development opportunities that refine their teaching practices and improve their implementation.

It is the responsibility of the School Director to oversee accountability of the school performance management plan actions, including the PMP checklist, the Core Knowledge Implementation Rubric, and the specific step laid out for each strategy noting completion of the strategy and the effectiveness of the Math PMP action items. It is the responsibility of the School Director and the School Board to review the outcomes of the plan and to assess the effectiveness of the monitoring plan. Student achievement on benchmark, state and national standardized assessments, and evidence of meeting action steps will be used to evaluate the overall effectiveness of the plan.

A review of the progress and effectiveness of the performance plan will be conducted at least once or twice each year (see strategy timelines below). When reviewed more than once a year, data-analysis of evidence for meeting the action steps will be conducted by the responsible parties and the preliminary effectiveness of the steps will be articulated to all staff to guide improvement of the actions to the end of the year. The end of year review will guide plan improvement for the following school year. Review data will be reported to the Board by the School Director, and further direction for improvement may be given by the Board to the School Director. See the action items under each strategy for the steps leading up to the following processes for gathering and analyzing data on the effectiveness of the action steps, which are also noted in the plan:

Strategy I

Action: Review, evaluate the effectiveness of, and make revisions to Hirsch Academy: CFA's written and adapted curriculum, including materials, assessment, and alignment to Arizona Common Core State Standards for Mathematics and Core Knowledge content. Revisions and evaluation will be based upon student achievement on benchmark and summative assessment.

Timeline: By June 1, 2014, and by each June 1 annually thereafter

Responsible Party: School Director and Curriculum Review Committee members

Evidence of Meeting Action Step: Committee meeting agendas and minutes, including documented revisions to Hirsch Academy: CFA's written and adapted curriculum.

For each grade level, the Core Knowledge Implementation rubric will be completed. The completed rubric will show that all of Core Knowledge content is addressed, and that content is addressed on grade - level.

The recommended revisions will then be made during the next cycle of curriculum development.

Strategy II

Action: Evaluate Strategy II and make changes as necessary. Survey all in-school staff stakeholders for review and feedback on monitoring plan.

Timeline: Ongoing; formal evaluation at the end of each school year by June 30th

Responsible Party: School Director, Mentor Teacher, Core Knowledge Coordinator, Lead Teachers, Teachers, AIMS and NWEA Coordinators, Special Education Teacher

Evidence of Meeting Action Steps: Report of survey results; Revised Strategy II in PMP that effectively enables school to monitor the integration of state math standards into instruction.

Strategy III

Action: Evaluate the effectiveness of Strategy III, and revise as necessary

Timeline: Annually, each summer

Responsible Party: School Director, Lead Teachers

Evidence of Meeting Action Steps: Meeting notes; revised Strategy III of the Math PMP as needed

Strategy IV

Action: Evaluate effectiveness of Professional Development, and revise when needed.

Timeline: Twice each year, in January and June

Responsible Party: School Director

Evidence of Meeting Action Steps: Survey results and teacher walk-through forms; revised Professional Development schedules

Sources

- Arizona Charter Schools Association. (2012). Education evaluator. Retrieved from www.azcharters.org/maps.
- Core Knowledge Foundation. (2012). Implementation Feedback Rubric. Retrieved from http://www.coreknowledge.org/implementation-analysis-tools
- Core Knowledge Foundation. (2012). Research. Retrieved from www.coreknowledge.org/research.