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NSRF Future Protocol supports math teachers in overhauling their curriculum

By Linda Hanson, CFG Coach in Alabama, lhanson@randolphschool.net

In the 2012-13 school year at Randolph School, an independent K-12 school in Huntsville, Alabama, we introduced our version of Critical Friends Groups, dubbed Professional Learning Collaboratives. As one of the NSRF-certified coaches, I was asked to facilitate a group of middle school math teachers in our inaugural year.

In the spring of 2013, we were facing a significant schedule change: moving from a traditional five-day schedule with forty-minute periods to an eight-day rotating schedule with one hour periods. During that eight-day rotation, each class would meet six times. It was with a healthy dose of fear and trepidation that we contemplated the fall semester. Would we be able to fill one-hour class times? Would we still be able to teach the essential content in fewer meetings? Should we reduce the breadth of curriculum in favor of depth? These and many other questions loomed large as we looked ahead to the coming year and the new schedule.

Earlier in the year, we had completed a detailed overview of our current middle school math curriculum, listing in detail each of the topics that we taught, and to what depth and level we taught them. We selected the NSRF [Future protocol \(AKA “Back to the Future”\)](#) as a means to envision our department under the new schedule.

The Future protocol consists of seven parts. In the first, a person or group presents what they are trying to accomplish. For our group, this was to determine what our curriculum would

look like subject to the new schedule.

The second part involves asking clarifying questions. Since we were working as a group, rather than with a presenter, we bypassed this portion of the protocol.

The third part is probing questions. For our group, these questions were those already mentioned, along with another major issue. Our school teaches a very traditional mathematics curriculum in grades six through twelve, and many of our current textbooks are no longer in print and are becoming more difficult to find in the reseller marketplace.

In part four, we projected ourselves two years into the future and described what our curriculum looked like. For us, this included the possibility of new textbooks, new technology, and an entirely new curriculum. As we contemplated these topics, we recorded our ideas on wall charts. For our group, the projected future included technology access for every student, solid mastery rather than superficial understanding, interdepartmental work in every grade, common language across all math courses, alternative forms of assessment, and a sense of not being rushed to “cram it all in,” among others. We selected a two year projection, because we felt that it gave us a year to get acclimated to the new schedule, along with a second year to work out some of the challenges we inevitably would encounter during the first year.

In part five, our group looked back from the projected future to the present, describing the current state. Our group

noted that class periods were too short to allow much hands-on practice with new material, that we did not have enough time in our day to collaborate effectively, and that students were more focused on grades than on learning and acquisition of new knowledge and skills. We also observed that word problems were intimidating to students, some portions of our curriculum were outdated due to available technologies, and that our exam week was quite stressful.

In part six, our group continued to look back from the projected future and discussed how we addressed the starting point and what steps we had taken to arrive at the projected future. For our group, this section was the most enjoyable because we were able to envision the ideal path to our projected future. For us, this path included more time to work together as a team, an iPad or laptop initiative in grades five and six, the introduction of e-texts and videos of ourselves teaching for students to watch from home. One of our major concerns was that with fewer and longer class sessions, student absences would be far more significant in terms of missed material.

In part seven, our group returned to the projected future and discussed if it could be made any better or was at an ideal state. We knew we had not come up with the ideal state but felt that if we could feasibly arrive at our projected future in two years, we would have made significant strides.

So where does this lead us? Where do we go from here? How do we make this happen? These are the logical questions which which we grappled. Our school offers the opportunity for paid summer faculty collaboration efforts. We wrote our grant proposal for a week of collaboration concerning our curriculum, and it was approved and funded. During our week together, we developed e-texts, using Haiku Learning Systems software, to replace or supplement our existing textbooks. Those that are using them as a supplement will likely expand these e-texts to eventually replace textbooks that are no longer available.

In addition to creating e-texts, we began to record a series of screencasts and videos of ourselves teaching lessons. We are only a few months into this process, so for now we are using them in our own classrooms. Students who are absent can keep up with class by watching their teacher's videos. Some of us have even chosen to flip our

classrooms; students are watching lesson videos in lieu of written homework, and class time is used to explore and practice the material in various ways.

As we approach the two year mark and arrive at our projected future, we hope to create an online general library of screencasts and videos available to all math teachers and students. If students need to go back and review something from a previous course, videos will be available in the library for them to view. If others need enrichment, videos will be available for them as well.

Another aspect of our projected path was greater access to technology, particularly for our fifth and sixth graders. Our eighth graders have individual netbooks for use at school, and this program was expanded to the seventh grade this year, as well. That expansion has freed up an additional computer lab that is now available to fifth and sixth grade teachers along with two netbook carts that teachers can sign out as needed. In addition to these netbooks, the fifth grade is piloting an iPad initiative this year. We have a dedicated iPad cart in the math classroom, with extras available to other teachers for center work. Our fifth grade has fully embraced the flipped classroom approach, using the iPads for game-based activity, math apps, and viewing of videos during class and study hall. Students have commented that they appreciate being able to do their written work during class and that the daily homework load has been greatly reduced in comparison to prior years. Parents appreciate that they have a reliable source of information that directly matches the teacher's approach and teaching for times when home reinforcement is required. When a student is out sick or forgets to take something home, the lesson video, handouts, and other resources are linked to the e-text; no trip to school is necessary.

We aren't where we projected ourselves to be – yet. We have, after all, two years to fulfill our vision of the future. But we have made the initial steps necessary during the past three months to get us there. News of our progress is spreading at school. We recently held a workshop with other teachers to share our experience and to help them take the initial steps toward the development of digital materials for their classrooms. The Future protocol allowed us to envision the future, determine what we would need to do, and to make a firm plan for how to get there.

