

## Professional Development: Visiting Other Teachers

**Quick info:** I visited a school using a strategy I wanted to implement with Linda Abrams (KSTF Program Officer, Teacher Development) and another 2012 Teaching Fellow. We met ahead of time by videoconferencing to determine the activities in which we would participate (e.g., coaching meetings, observing classes, leadership meetings, etc.). We were constantly debriefing during our time at the school.

**Who should consider this PD:** All classroom teachers

**Duration:** One day

**Cost:** \$300 (hotel and meal cost) + travel

At the beginning of this school year, I found myself with another new prep: Concepts of Advanced Algebra. Having a new prep for a teacher can sometimes mean a year of constantly feeling behind without a “baseline” from which to start. Creating homework assignments, assessments, anticipating and responding to student struggles that you haven’t seen before—it can be exciting, but it can also be exhausting. For me, I was excited about having a course in which I could try centering my classroom around carefully scaffolded and rich discussion-worthy problems. This variation of Problem-Based Learning (PBL) moves away from direct instruction and encourages students to author their own mathematics with help from one another. Phillips Exeter Academy has an entire curriculum focused on such problem sets and utilizes what they call a “Harkness method” in each classroom, where groups of up to 12 students sit around a round table to share ideas and strategies for solving these problems.

I had attended the Exeter math conference the summer of 2015 and was excited about the idea of implementing it in my classroom. Particularly motivating was a “Conference Within A Conference” session I attended called “Harkness for Thirty” by Jonothan Sauer. Teaching Concepts of Advanced Algebra would allow me to experiment with some of these methods in my classroom. I was convinced that taking a PBL approach would help students build the thinking skills they need to be successful outside of my classroom.

However, when the school year started, I realized that learning wasn’t occurring like I had hoped. Students were resistant to the new strategy. They were frustrated, and when their struggle stopped being productive I didn’t know what was causing the issues. I decided to change course and try teaching strategies with which I was a bit more comfortable. I wasn’t ready to completely abandon the hope that all students were capable of thinking critically and discussing challenging problems with one another, but clearly what I had going on wasn’t working. I needed to see PBL in action.

Around that time, our cohort was planning our fall meeting in Phoenix—home to 2012 Fellows Mary Chin and Ian Caldwell’s school, Arete Preparatory Academy, which uses Exeter’s problem-based curriculum. Mary and Ian had invited all Fellows interested to come to their school—this invitation perfectly fit my needs.

Through visiting Arete, I wanted to better understand what structures and routines Ian and Mary used to help all students learn in a problem-based setting. I also needed to know some logistics: How did they track participation? How did homework work? How did testing work? These were all things I was trying to figure out through trial and error, with more errors than successes.

While at Arete, Lindsay McDowell (2012 Fellow), Linda Abrams and I sat in on a leadership team meeting and observed Mary and Ian’s math classrooms, as well as a social studies class. Each of these experiences gave us a different lens to view how a problem-based curriculum was implemented in the school.

From seeing the students and classes in action, I saw how conversations and discussions were at the heart of many students’ classes. In the “great lessons” class I observed, students led the discussion around Dante’s *Inferno*. Even in staff meetings, it was clear that discussion was valued over other learning or delivery styles. This helped me realize that students are not blank slates when they walk

into my class—they have had varying experiences with discussion in prior classes. I needed to know more about their experiences in other content areas around discussions to better understand what discussion skills students brought into my classroom. In addition, I needed to make my expectations for discussion in math more clear. I needed help to build a picture of what a productive discussion includes.

Watching Mary and Ian teach also helped me see how this style of teaching looks in the “real world” and see beyond the theory. Before implementing PBL in my classroom, I had several concerns about whether I would be able to do this with my students. Homework completion was non-existent, and some students were prone to distraction. In theory, I thought Harkness would only work if students did their homework each night and if they had the ability to stay on task for 55 minutes at a time. When seeing Mary and Ian’s classroom in action, I saw that was not the case. Talking to Mary and Ian, they mentioned that not every student does their homework each night and, like most classrooms, there would be a student or two off task while working in groups. It was encouraging to know that these were things that many teachers struggled with but that did not prevent teachers from having high expectations for their students inside the classroom. Each teacher had different strategies to keep student engagement strong in class. As I watched Mary and Ian teach, I was able to see how their decisions in the classroom helped keep student work productive. For example, while I was there, Mary “froze” the class to capture their attention mid-problem. This technique required students to focus their attention on Mary or another student, clarify a common misconception, and then return to their small group to continue working. These small but significant decisions helped me develop strategies for encouraging productive work in class.

## **When I returned to my school, I made a few changes to how I implemented problem-based learning in my classroom:**

**I was more intentional about building up participation and collaboration skills.** After witnessing how omnipresent discussion was at Arete, I knew I

needed to do some norming specifically around discussion for my class. Using some resources Dr. Sauer shared with me, my class read an article about the philosophy behind problem-based learning and talked about what the classroom should look and sound like. From there, I focused on one aspect of what I should see/hear in class and told students I would be taking notes when they were participating in one of the productive ways we discussed. This became a type of “hybrid participation quiz.”

**I broke up class time.** I planned out at what points during the problems I anticipated students needing additional clarification, or points where I really needed all students to be on the same page for during the lesson. When it was clear that students were at those points in the lesson, I would implement the “freeze” strategy I saw in Mary’s classroom to get their attention, re-direct or clarify and then allow students to keep working.

**I made space and structures to encourage students to take notes on their learning.** When talking to students at Arete, I noticed many annotated their notes in and out of class—a practice that I modeled for students but did not explicitly expect from students. I realized from my observations that I wanted to provide more opportunities for students to reflect through taking notes. Rick Barlow, a 2013 Teaching Fellow, had talked about grading student-self-corrections to homework at the 2016 KSTF Summer Meeting, and this seemed like a great way to integrate reflection into my classroom. When I returned to my school, I purchased 25 green pens that were special “reflection pens.” Each hour, I had students return to their seats for the last 10 to 15 minutes to debrief as a class. This was time for them to grab a green pen and write down notes next to each problem we discussed. I modeled this with my own green marker on the whiteboards around the room as well and provided prompts for students to write their own reflections at certain places. It was these reflections on their problems that were graded each day.

From going to Arete, I re-realized that learning happens in a context. “Context” covers a variety of aspects of our educational communities, but in this case, I saw how one strategy in theory looks in the context of a classroom. I have long been enamored with problem-based learning and could envision doing it in my classroom, but the actual implementation in my context was rough. Going to Arete Academy showed me how the teachers and community created a context that allowed problem-based learning to be effective. Equally as encouraging was

knowing that my students and I could create a context that would make the strategy effective for us as well.

I truly consider teaching an art form: instead of clay, oil paint, or charcoal, teachers work with complex instruction, project-based learning, or engineering design. Furthermore, just like artists visit galleries and share studio spaces to push their thinking about their work, teachers also benefit from similar collaborations. Even within my own school, I have observed Spanish teachers to see how they engage students and break down that “fear” barrier students can bring into the classroom. Speaking with English teachers has challenged me to think more deeply about the types of contributions students can make in classroom discussions. While I took a day off from school and traveled to see these teachers at Arete, there are fantastic “artists” in each building from which teachers can learn. My own challenge is to find these teachers closer to my classroom in Minnesota, see these teachers work in their context, and understand how these strategies and philosophies can be adapted in my classroom.

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