Sabbatical Report Redux

John Golden
Mathematics Department

Original proposal:
Goals and Objectives

1) Gain further experience in planning and teaching in a Standards-based elementary mathematics classroom.
2) Help plan, select and introduce a variety of computer software that will be incorporated into the mathematics curriculum at Aberdeen Tech/Math Academy. These applications will have a particular emphasis on geometry.
3) Document the results of (2) for publication. Either articles on individual lessons for *Teaching Children Mathematics* or *ON-Math*, and/or a more research focused articles based on assessment of the impact on student understanding of the technology.
4) Creation of vignettes and collection of examples of student work for use in Math 221 and Math 322, preservice teacher mathematics education courses with a focus on geometry.

Timetable

Fall 2003:

Instructional time at the Aberdeen Tech/Math Academy, gaining familiarity with students' educational level, curriculum and mathematical needs. Preliminary investigation of research related to the project.

Winter 2004:

Continued instructional time at the school, including field service placement of Math 322 students. Begin to search for additional research articles related to the project, particularly those related to how to incorporate software into a discovery-based classroom.

Spring/Summer 2004:

Ms. Walborn and I will evaluate and choose the computer software to incorporate. Arrangements will be made with the school's information and technology supervisor to have installed and ready before the fall. Piloting of student use of Geometer's Sketchpad and Kaleidomania in the Math/Art Festival. Continued survey of literature, particularly related to assessment of the software's impact on the students.

Report from many years later: (Summer 2006)
I'm not sure what happened to the original report of this sabbatical, but the call from the Provost's office to revisit the experience provided an interesting opportunity to think about what effect the sabbatical has had on my work.

The experience was vastly different than planned. Fall 2003 saw Aberdeen Tech/Math Academy relocated to Shawnee Park and redubbed Shawnee Park Math/Science/Tech Academy. Despite assurances from the district, the computers which were to have been available were not, and, to complicate matters, the onsite information technology teacher was most uncooperative. Furthermore, my principal cooperating teacher, Susan Walborn, was on extended medical leave for the first ten weeks.

I was at the school 2 or 3 days each week for the full school day, in cooperative work with Chris Bengston, the technology teacher. In addition to coteaching and lead teaching many lessons with her, we designed a

math/technology project for kindergarteners together which involved the construction of a life-size paper doll of themselves with movable joints. I also provided math support for the technology lessons in Susan's absence. Eventually, on my own time, I was able to get the computers up and running and connected to the internet. At Susan's return, we centered our coteaching around the use of these computers. We concentrated on use of online applets and activities designed for Geometer's Sketchpad. I believe I was of great support to Susan in her return.

Goals 2 and 3 were severely hampered by the change in circumstances. Many lessons were incorporated into Math 221 and Math 322 from the experience (Goal 4), and I was extremely successful in implementing Goal 1. In fact, my comfort in the elementary classroom, and contacts formed in the Grand Rapids Public Schools has been fundamental to my current principal scholarly activity, inservicing elementary teachers in mathematics. This activity has grown to the point where last year, with some support from the department in release time, I was active at four elementary schools, working with more than 50 teachers, and teaching lessons for more than 400 students. This involvement led to my development with Brian Gamm and Ena St. Germain of the Grand Rapids Instructional Model for mathematics, and participation in the textbook selection process for GRPS, which resulted in the selection of Everyday Mathematics, a standards-based, exemplary curriculum. This year I have several projects ongoing with GRPS elementary schools. I am proud to be a part of trying to improve mathematics instruction for so many students.

This scholarly work on inservicing teachers had connections with Presidential Initiative Award David Coffey and I received from the Pew FTLC which centered around professional development for Affiliate Faculty in the Mathematics Department. David and I have applied with Esther Billings to present on our theoretical framework for inservicing at next years Association for Mathematics Teacher Educators conference. Work on the Grand Rapids Instructional Model was presented at GVSU's Math in Action 2006 conference and the 2005 Michigan Council of Teachers of Mathematics conference, as well as in an invited panel discussion at the same MCTM conference.

When planning the sabbatical, I could never have anticipated the directions it would eventually take me. Especially when mired in the frustrations of the moment, when it felt like nothing was going to work. I am extremely grateful for the support of my department, (then) division, and university in pursuing this work. My stated goal on my curriculum vitae has been "To participate in mathematical outreach. That is, to bring math education to traditionally underrepresented groups, such as the lower income brackets, ethnic minorities or women. This is due to my strong belief in the enabling power of mathematics." This sabbatical led to deeper and more influential outreach than I could have imagined, and I am excited to think where it may yet lead.