

Lessons Learned

Wrap-up of Structured Follow-up Courses

December 2, 2006

Presentations

On the final morning of the Structured Follow-up (SFU) courses, **teachers shared** with others in their respective courses what they had learned through the lesson study. As a central feature of the SFU courses, teachers were responsible for developing or identifying an appropriate lesson for the students to whom they were assigned. When the teachers had similar assignments, they selected the same lesson to study. The lesson was implemented with students. Then the effectiveness and impact of the lesson were examined through peer observation of other teachers, observation of student engagement, student post-assessment, and the quality of student work.

Instructors for the SFU courses provided a **rubric for the lessons**. In most cases, the presentations elaborated on elements of the lesson as outlined in the rubric. Teachers provided a title for the lesson, their names and teaching assignment information, information about the demographics of their students, name of the unit and standard that the lesson was to address, the impetus (need) for the innovation, the hypothesis, the plan in phases (always including a pre- and post assessment of student learning), the impact, and the conclusion or summarizing statement of the teacher.

The power point presentations required as part of the report were well-developed expressions of the commitment to quality and learning engendered through the courses. Teachers included graphs, photographs, sometimes video clips, color, and special effects to provide the audience of other teachers and the instructor with tools to fully understand their work. In some cases, the presenting teacher admitted that this was the first power point the teacher had ever created. Most of the **lessons had been well-received** by the students and positively impacted their learning. With only minor tweaking those lessons could be applied to new groups of students with similar success. They could also be shared with colleagues with similar assignments.

However, in some cases, the lesson failed, but the **teacher's grow** from analyzing the failure was valuable. One teacher reported that until she saw herself on video, she had not realized how much of the time she talked. She could also see that the students were not as fully engaged when she was talking as she would have preferred. Apparently, the instructors in the SFU course had provided a climate of trust that allowed this teacher to share openly with her peer the facts about the failure and her need and action toward changes in her practice. Learning, through another lesson that was partially successful, was that the **materials selected** for a couple of the activities did not work well. Others who had used the instructional activity with different materials were able to suggest specific changes in materials selected.

Teachers seemed to view the morning of sharing lessons learned as a **satisfying wrap-up** to their own work and also an invaluable opportunity to learn from the experience of others.

Celebration

Participants in *The History of Mathematics* presented a **visual expression** of some of their learning by presenting themselves as mathematicians and scientists from history. As participants in all of the courses filed in for the culminating celebration of their completion of the SFU courses, those dressed as historical figures in math or science spoke of their contributions. Some more familiar figures included Galileo, Archimedes, Hippocrates, and Florence Nightingale. Lesser known figures included Albrecht Durer, artist, mathematician, and contributor to the field of geometry; Sophie Germaine, contributor of Fermat's theorem; Emmy Noethes, German/Jewish mathematician; Blaise Pascal; Georg Cantor, contributor to set theory and how whole numbers differ from irrational numbers; Marie Agnesi, contributor to calculus; Claribel Kendall, a Colorado-born contributor to algebra; Nicolo of Brescia, contributor to algebra and cube theory; and Abd Allah Muhammad ibn Musa al Kwarizmi, writer of book on algebra and algorithms.

Some of the "mathematicians and scientists" are pictured.



