1999

When Will I Ever Use This Stuff Anyway?

Suzanne S. Austin

Charlotte L. Berceli

AUTHOR: Suzanne S. ***Austin***; Charlotte L. Berceli
TITLE: ***WHEN WILL I*** EVER ***USE THIS STUFF***, ANYWAY?
SOURCE: Mathematics Teacher 92 no9 798-9 D 1999

As instructors of an intermediate-algebra course at a large urban community college, we decided to ***use*** a service-learning project to help students understand and appreciate the mathematics that they were studying. ***This*** outcome transcended the classroom and best motivated mathematics students by helping them realize how important the subject is to their futures (Jenrette 1994).

CLASSROOM SETTING

Students worked in small groups of three to five students. The instructors distributed handouts to each group member to introduce the project. The instructors assisted groups in defining members' roles, for example, spokesperson, notetaker, or scribe.

INTERVIEW AND IN-CLASS GROUP PRESENTATION

In the first part of the assignment, groups selected a mentor at a local business to interview. The instructors encouraged groups to find mentors among family, friends, and neighbors. In addition, the instructors created a list of mentors by calling nine different professional groups; each mentor would be interviewed once during the semester. Any group that could not find a mentor was given the list. The objective was to have a real person describe, in detail, a real algebra problem being solved in the real world. The group made ***this*** request in its initial contact with the mentor. At the beginning of the scheduled interview, the group gave the mentor a letter of introduction and thanks in advance from the instructors. After the interview, the mentor completed a survey assessing the group's work and the value of the project. Each group made a ten- to fifteen-minute in-class presentation, which was videotaped for later ***use*** in assigning grades.

OUT-OF-CLASS GROUP PRESENTATION

After the in-class presentations, the instructor worked with groups to perfect their presentations. Teacher observations during the in-class presentation determined the extent and nature of ***this*** work. Contact information obtained through the service-learning department on our campus enabled groups to share their discoveries in a beginning algebra class at a nearby middle school or high school. Each group made its own arrangements. Many groups decided to make their presentations at a group member's middle school or high school. At the end of ***this*** presentation, each of the teachers and students in these classes completed a survey similar to that completed by the mentor.

RESULTS

The project used such educationally sound principles as self-discovery, collaborative learning, exploration of career opportunities, application of knowledge, and service to one's community. Our students thought that the project allowed them "to take a closer look at algebra outside of the (boring) textbook and form [it] into something understandable." By sharing their learning with the public school community, our students were also making a contribution toward short-circuiting some of the harbingers of math anxiety.

When our students completed a survey at the end of the term, the feedback was exceptionally positive: 94 percent of the students agreed that the service learning fostered by the class project helped them see how the subject matter can be used in everyday life; 100 percent agreed that the class was successful in helping them really learn. One student commented that "the service-learning project is a great way to learn about and to do something for the community."

The comments that the middle school and high school students and their teachers made after our students' presentations were very encouraging. Students wrote, "***I*** learned how algebra is important in everyday life" and "[***I***] realize why ***I*** need to pay attention in class ...." Teachers expressed such thoughts as "... ***I*** found that the project was a sincere effort to show my students that what they are doing in class ***will*** lead them to their futures" and "[t]he students were interested in what the [college] students had to share."

The mentors' assessments were also supportive of our project. Their comments reflected a willingness to continue their association with the project. One mentor commented, "***I*** think your project is right on target! Being a poor algebra student in high school/college, ***I*** saw little or no need how algebra would help me in life. [S]howing students the real needs, as in practical situations, not only clarifies but makes a dry learning process fun (good job!)."

CHALLENGES

1. Our intermediate-algebra course is crammed with content that must be mastered for successful entry to the next level of mathematics. Every minute of class time counts. The class time needed to explain the service-learning project, to allow for group work, and to make presentations created an ongoing conflict with the time needed to deliver the course content.

#15614

Tailoring the syllabus to meet the requirements of the course and the project was a challenge, but the opportunity to make mathematics come alive allowed us to face ***this*** challenge.

2. Working with the public schools involved issues of unobtrusiveness, scheduling, convenience, and competing projects. A typical teaching day anywhere is already very dense. Although the notion of serving the community by sharing with other schools was a lofty ideal, gaining entry into the schools was not easy. It took patience, perseverance, and a bit of a sales pitch.

3. ***When*** working in groups, some students resist being part of a team. ***This*** problem, of course, presents challenges to group members and to their teacher. In the future, group members may be asked to assess one another's contributions to the project as a significant part of the overall project grade.

4. Most presentations took a simplistic view of algebra. Students found an abundance of proportion problems and simple linear equations. Students took the position that "if it has an x, then it must be algebra."

5. As a result of the service-learning project, students had an opportunity to observe a variety of careers that ranged from the obvious, for example, a mathematics tutor, to the not so obvious, for example, an electrician. We suggest that teachers make a concentrated effort to challenge students to seek more unusual and interesting vocations and careers.

In light of these challenges, we would do the project again. It is well worth the effort to encourage students to dig deeper to uncover the many ways that mathematics is at work in the world and to learn why mastery of it greatly enriches all our lives.

To get more information about our project, including topics, worksheets, and so forth, contact the authors via e-mail.

ADDED MATERIAL

Suzanne S. ***Austin***, saustin@mdcc.edu
Charlotte L. Berceli, cberceli@mdcc.edu
Sarae Mathews, smathews2@compuserve.com
Miami-Dade Community College
Miami, FL 33176

"Sharing Teaching Ideas" offers practical tips on teaching topics related to the secondary school mathematics curriculum. We hope to include classroom-tested approaches that offer new slants on familiar subjects for the beginning and the experienced teacher. Of particular interest are alternative forms of classroom assessment. See the masthead page for details on submitting manuscripts for review.

BIBLIOGRAPHY

Dorff-Pennea, Nancy. "Overcoming Roadblocks to Learning Math." Innovation Abstracts 23 (2 February 1996): 1.

Jenrette, David. "You Can Change How Students Perceive You! or How to Cope with Student Feedback Questionnaires." The Symposium 3 (1994): 1-4.

Jenrette, David. "Lack of Understanding Leads Students to Opt Out." NCTM News Bulletin 32 (November 1995): 1, 7.

Silcox, Henry C. A How-to Guide to Reflection: Adding Cognitive Learning to Community Service Programs. Philadelphia, Pa.: Brighton Press, 1995.

Tibbs, Peggy, and Janette Jordan. "Sharing Teaching Ideas: Career Posters." Mathematics Teacher 87 (September 1994): 410-11.