

## **Math for Elementary Education Majors, Math 122.**

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The students who are taking Math 122 are planning to make a living by explaining concepts to other people, children in particular. In mathematics, as with many things, the language one chooses to use in an explanation is critical to the student's ability to understand the concept. My main goal in the following exercise was to have the students focus on using a style and language appropriate to their audience and gain a clear sense of what they sound like to others when they explain a mathematical concept. Kathleen Chambers, Photography Instructor, was kind enough to observe the activity and provide a critique, which will be summarized below. The following is a description of the activity.

1. Write a letter to a classmate who missed class the day we learned about graphical representations of data. (20 min)
2. Trade letters with a partner so that person can read and critique your explanations. Bring the letters with critiques back to the next class.
3. Write a dialog between yourself and a third grader about graphical representations of data where you are attempting to teach a particular concept. (20 min)
4. Find a partner and read the dialog. Your partner will read your voice and you will read the child's voice. (10 min)
5. As a class, discuss the effectiveness of the day's activities.
6. Write a 1-minute paper describing your experience with this activity.

It was clear to me that the activity has a great deal of potential based on responses from the students. They clearly enjoyed doing something a little different, and many commented that they benefited from the activity. There are many things I would do differently based on comments from students and later conversations with Kathleen.

Kathleen pointed out that it would be good to give them a list of questions to answer as they critique the letter rather than just ask for general comments. Many of the students are not familiar with methods of critique, so they need a rundown of some etiquette and a process. Kathleen also suggested that they critique on the spot rather than as homework, maybe verbally, with the writer taking notes as their partner critiques their work. I also noticed that the topic was too broad. They would benefit more if I narrowed the topic so that they were all writing essentially the same thing in different words. That way they could get a more benefit just from comparing their own with their partner's explanations.

During the role play, I chose not to let people read their own voice because I wanted them to get a sense of what they sound like to other people, and in particular, to a child. One student commented that she did not want to do the activity because it would be "embarrassing." Surprisingly, she was one of the best students in the class. The students appeared to have fun with the activity. Nobody seemed uncomfortable once they got into it. I was pleased to see that they took it seriously. If I did it again, I would do the dialog twice so that they got to write, hear their writing, then try it a second time to work out some of the kinks in the language. I want them to find the best way to explain a concept and the best words to use. I also want them to understand that teaching is a process of constant improvement.

After everyone had read their dialog, we had a discussion. I'm terrible at managing classroom discussion, so I don't think it hit the points I was aiming for, but the idea was to get feedback on whether the exercise achieved the intended goals. If I do this again, I will have a much more specific list of questions in mind and on paper to direct the conversation. I will write on the board and state the goals of the activity clearly at the beginning as well as just before the discussion. I may even spend 5 minutes on a class discussion of why we might want to achieve these particular goals in our communication.

As I stated above, I think the activity has great potential to improve the communication skills and the awareness of these students. Writing, speaking, and practicing are all important parts of learning any type of Math. It will be a priority of mine to continue working with students on all three fronts.