Math Methods
Fall 2007
Final exam

Learning and professional growth:
Committing to the learning and achievement of all students

In the beginning of this course, I was equipped with minimal strategies for ensuring that each and every student in my classroom will succeed in mathematics. I knew that it was important to provide students with equal opportunities; I understood that managing and maintaining a classroom of individuals was a necessary consideration in planning and enacting lessons. Through the work in this course, I was able to acquire specific strategies and approaches that will help me to develop equitable opportunity for all of my students.

In September, one assignment was to read Chapter 5 in our Classroom Discussions text, which outlined "solution methods and problem-solving strategies." I took note of these specific strategies and gave summaries of each, but I was unable to put the strategies into practice until much later in the term. In the same assignment, I read "Addition and Subtraction" by Carpenter and reflected in my notebook upon the main themes and ideas that coursed throughout both texts.

> Understanding the different ways that students solve problems will contribute to my work in helping students refine and concretize their ideas. This is especially important when students are using ineffective strategies for problems that require larger numbers or grouping. Being able to highlight certain strategies that "appear" (strategies that are, in reality, coached out of student work) in discussions about different problems will help students acquire more strategies for problem solving.

My response was general and vague; what strategies did I mean? What does an "ineffective strategy" look like? Generalizations such as creating equal opportunities for students based on the different ways students approach mathematics are present in my reflection, but in September, I was unable to articulate the different ways that I can build upon students' ideas and coax their confidence as mathematical thinkers.

A renewed understanding of ways to commit to the achievement of all students came with the student interview(s) I enacted mid-semester. Having to conduct two interviews was a hidden blessing; I became more aware of the vast differences between my two students in the way that they approached math. Developmentally, the two students were about equal; they had a good grasp of a one-to-one correspondence between numbers and objects and the basic strategies for addition and rebundling. However, when I presented more difficult tasks, the outcomes were very different for the two students. These interviews helped me to realize that in my lessons, I must attend to the existing ideas students have about mathematical concepts in order to build their knowledge, and I must do this in ways that encourage *all* students to learn.

Another way in which I have grown in the area of committing to the learning and achievement of all students is in my analysis of student errors. In class, our first analysis of errors was in subtraction, and my responses were, again, vague: "While it is difficult to see the students' thought process with this problem, it is clear that the student does not have a clear grasp of what answer would make sense." My analyses of errors in division were more developed and less presumptuous; I approached each problem under the assumption that each student went through the problem in a way that made sense to them, and that I could uncover the meaning behind errors rather than just point out the obvious mistake. The circulating assignment also helped me to record and reflect on students' individual responses to problems. I noticed that many of the students seemed disengaged from the math work, either working hurriedly to finish or working nonchalantly and in a disconnected way, while other students were treating the workbook problems as carefully and meticulously as they could. My records allowed me to look back and see much more than what students accomplished; they show me the students' individual attitudes toward math, and they show me ways that I can best attend to each of their individual needs as a teacher.