Reflection on 5th grade public research lesson on May 21, 2005
at the National Teachers Academy Professional Development School

As I reflect on the ratio lesson, I found the following areas of concern;

1. n-to-1 ratio
2. ratio table
3. the need to move at a slower pace

I focus on the introduction, which I feel set the tone for the entire lesson. I originally planned to spend only about 5 minutes on the introduction. I found myself taking at least 20 minutes. I saw confusion on the faces of my students and I wanted to make sure they were "with me" before I moved on. When I reached a point where I felt they were more confident, I tried to move them forward to the first problem.

I felt very confident with the first problem when some of the students immediately identified the weaker punch, based on their visual observation of the

recipes and that they could explain how they knew it was weaker. The fact that their explanations were accurate, concise and that they could clarify for the other students their reasoning was a very powerful moment. This seemed to be the appropriate time to move to the second problem.

I felt my students were "with me" in understanding the task before them, but that they felt handicapped by the requirement to use "n-to-1" ratio. I knew the students understood how to set up a ratio, and that they could calculate or use some other method to solve for an unknown. But, using the "n-to-1" ratio caused many students to be uncomfortable.

I think I stressed the use of "n-to-1" ratio too much. The students could have used other methods to determine which punch was stronger. Some of the students had learned to convert a ratio to a percent, others used visual depictions, and still others used a method of calculation. I also think the use of the ratio table may have been introduced a bit prematurely, and caused some students to doubt their understanding of finding the relational connection between the proportions.

After reading my students journals I realized they were slowly coming to understand using the "n-to-1" ratio. They also demonstrated a degree of comfort using the ratio table. It was also clear that the true relationships between the quantities of cranberry juice, water and punch were becoming more evident, and that the students would soon be ready to recognize that the proportional relationship remains the same whether you double, triple or quadruple the recipe.

These were giant leaps for my students, and I'm not sure that their conceptual understanding was solidly formed. I recognize the need to slow the pace of the pre-lessons. I also recognized that this lesson covered too much information/material to be internalized in such a short time. On the whole, I was not displeased with the result of the lesson, but I do see where there is a need to make very specific changes to accommodate more solid student understanding.

Student comments from their journals:

I learned that on a ratio table you have to x's a number by what your n. Like this

CJ	h2o	Punch
1.5	1	2.5
3	2	5
4.5	3	7.5

If I x's 1.5 by 2 I get 3, and if I x's 1.5 by 3 I get 4.5. So I can x's 1.5 by any number of waters. Mrs. Holliday asked us how much water and cranberry juice we would need to get 60 cups of punch. This is what I did 1.5/2.5 = x/60. 36 cups of cranberry juice and 24 cups of water equal 60 cups of punch. Right!

3/2 = x/1

1.5 = x The n-to-1 ratio is 1.5. If you know the n-to-1 ratio juice-to-water you can work out how to multiply up to as many as you need.

CJ	H2O	Punch
1.5	1	2.5
15	10	25
30	20	50
36	24	60

I learned about n-to-1 ratio, but I did not know how to do n-to-1 ratio. I also learned how to do a ratio table. The proportion always stays the same.

I learned that you could use different ways to figure out the problems, like pictures, tables and fractions. Ms. Holliday I like to use pictures not n-to-1 ratio. N-to-1 ratio is still confusing but I tried it any way. Does n-to-1 ratio always work when you need to make the recipe bigger? Can I try it with another recipe?

Why don't you try it on another recipe (look at the back of your book).

Ms. Holliday me and L did a n-to-1 and it does work.