

Day 1 Teacher Journal

Planning

One of the problems that often occurs when you're teaching is that what you have planned doesn't often fit into the school's regular scheduled time period, as happened to me today. So if you were to take just today as an isolated entity and try to critique it, you would find there was no closure and no wrap up, and you would have to argue that students went away from that lesson with multiple understandings of what was happening. But for me that's not a problem because I don't see these definitely correlated with the periods of the day. So this lesson will spill over into tomorrow and we'll probably then pick up the second problem toward the end of the day. It's more important to me that I keep my mathematical agenda in front of me and let that guide my decisions as opposed to trying to teach to the clock on the wall. Now, that's not to say that you don't need to be cognizant of how much time you have left because I, you know, you don't want to have to stop just in the middle, which is kind of where I got caught today. You would like to have some kind of stopping point, so it becomes a real tension of trying to balance where did you want to go and how much time you have left in the class.

In thinking about tomorrow in light of today's activity, the first thing I'm going to do is ask Megan to come back and give her explanation again. Her group is one of the three groups that did the total to rank the list and so, I'm going to actually have her talk about that, and I'm gonna have the, her totals out beside each of the items in the ranked list. Now in talking with her, in talking with her group, I did pose the question of whether or not did they were going to do average, so I intend to share that with the class and to say to them, "You know I asked them if they wanted to find the average and they said they didn't need to", and so I'm going to ask the class if they think it would make a difference and then to ask them to actually do the calculations. So, I'll have it on the board so that we could actually then do the calculations and see if it changes the rank order, which hopefully it won't. After we have that, then at that point I'm going to pose the question of, "Is this a coincidence or will this always happen"? And so I'm going to have that conversation about the sum, average relationship in the context of their work about the groups. From there I'm going to move into the first of the Crime problems. I collected newspaper clippings over the last several weeks out of the Tennessean; they've been running articles about the police force and the safety of Nashville, so it's really played right into my hands. So, I'm going to pose this as an actual problem that's occurring in the city of Nashville; they're really debating whether or not there should be increased funds for the police force. And it is the mayor against the police force and the city council so that's fortunate that that has occurred. And against that background, I'm going to ask them to look at the first set of data that the mayor has collected to determine if they think Nashville is a safe city. And I'm actually going to ask them to find out where Nashville ranks compared to the other cities in the list. I would imagine that we've got a somewhat shorter period tomorrow that just their getting through working on that list will be all that we'll be able to finish tomorrow and the discussion will have to come on the following day.

Facilitating

Another issue that arose for me today was the problem of deciding whether or not to intervene with the groups or to what extent to intervene. As I originally monitored them when they were trying to put the groups together and come up with one ranked list, I found that all six groups were doing a frequency type activity. In other words they were looking across the lists and deciding globally what seemed to be in the first slot most, or then what was in the second slot the most. And they were making some decisions again based on what they thought but they, it wasn't for me as mathematical as I would like for it to be. It was problematic in that I didn't have a diversity of solutions to frame my whole class discussions. And so in the process of my talking to some of the groups I decided to intervene and pose the option of using some sums as a way to come up with the ranked list. I did this with the group of boys and it seemed to be a viable option for them. I think when these situations arise for us as a teacher, it's a real dilemma because

then you have to step back and think how much ownership do they have for this way. Did they do it because they thought that's what I wanted them to do or did it really make sense for them? I think in the end we ended up with three of the groups actually doing totals, and so I do believe it became viable and was seen as a good way to solve the task, but the initial problem was for me was trying to impose my agenda on the students and having them retain some ownership in their problem solving process. ...When I was looking, when I was monitoring the groups and thinking about how to orchestrate the whole class discussion, it became clear that we would have a discussion about the frequency way, because I had three groups that had done that and then we would talk about doing the totals. Since none of the groups did the average, I now had the option of raising that myself. I did try to bring that up with Megan's group and in fact when I was monitoring their group, at one point they said "we can do this finding the average." When I came back to the group they were simply finding totals and so I asked, "Are you now going to go back and find the average of those numbers?" And they were quite clear in their explanation to me that it wouldn't make a difference in how the ranks came out, which I thought was quite telling and kind of gives you the sense that they have a sophisticated understanding of that relationship. So my thought right now is to use their activity and my exchange with Megan to pose this to the class as a problem and to use their actual data. And, for instance, say to them, "This is what, this is the ranked list that these groups got by finding the total. What would happen if we found the average of these numbers, do you think it would change or do you think it would not?" And actually have them do that themselves in their groups. Then we can take the results of their activity as a starting point for the basis of a discussion of that relationship. This means I won't use the problem that I had intended to use for homework, but my point in doing the homework was to have each of the students individually engage in the arithmetic and the computational process so they could see what was happening. And I think I can achieve that by using their work. Another advantage is that I don't have to introduce another scenario, we stay embedded in the same context of the problem from today.

Understanding Student Thinking

When thinking about the students' participation today, I was extremely pleased with how well they paid attention and how they worked together in the groups. It's real interesting because I think a lot of times when students start sharing their ways in whole class, I know Rob had a question for Jeff's group and he was, he found it problematic when they started doing it the same way, he found it problematic that they had taken the tie between quality and brand and put one of those in the second slot and the other in the sixth. And so it's a real tension for the students to not be extremely critical, but to ask questions so that they could understand. And so I think that they worked well today in the whole class and some of the small groups, there seem to be some situations where some of the students were not as active or did not participate as well as I would have liked. So, I'll really have to work to get a handle on that. Part of the problem in monitoring the small groups is the students will act differently when you approach their group. They see you coming and things that they were saying they might say differently or they might act differently when you're there. So, it's only through a process of revisiting that situation that you ever get those, that those norms become constituted in a way that really supports what you hope to achieve mathematically. I think we've made some progress and I was extremely pleased with how they were able to share and work in their groups, but there's always room for improvement.

Mathematical Content and Context

One of the groups that ended up doing the totals, when they found their totals and they put them on the lists, they wrote percent signs beside them. And as I was walking around I noticed the percent signs and I, my first interpretation was that they simply just attached the percent sign here or somehow misinterpreted the results of their own activities. So I asked them if this, those were percents and they said they were. So I was kind of caught off guard 'cause I wasn't really sure how to intervene or ask a

question that might cause a perturbation in their thinking that those were percents. Fortunately one of the students helped me out, which is often the case, and Gianni said, "I'm going to check these to make sure they add up to one hundred, that way we'll know who did it correct". So his sense was we had these eight percents and if we've done this correctly, then when you sum these it should sum to one hundred percent. Well after he had added four of them I believe he was already over one hundred percent, and so I asked, I told him to stop and check his calculations. I said, "You've already got 116 percent now, what's the problem"? Well, Caleb, one of the other members of the group, said, "I think he was thinking there were a hundred of these and these aren't really percents". So they were able to solve that problem within the group. You know this could have been viewed as a teachable moment that I let slide, but for me this was not an opportune time to raise the issue of percents because in order to do that I would then have to have the students look at the total responses and take the percent out of the total and I really didn't want to go that way. So for me, at this particular juncture, I felt it more efficient and more effective to get the group to reconcile for themselves what the role of percent was or was not in this particular problem.