Hi folks,

I just did the data reduction for the first knowledge survey that you all filled out along with the textbook review last week. Thought that you might enjoy seeing the data and find the approach useful for your own teaching one day.

The data are attached as both a spreadsheet and a graph.

What did we learn? Here's my summary.

1. Overall, self-assessed knowledge went up after reading the chapter. On average, the scores went up 27%. For few questions, there was little change. Some of these were questions that the you all could already answer. There was a 23% drop in the lowest rank (can't answer). So, I conclude from this...that the class learned something by reading the chapter.

2. The learning is not equal. Looking at the graph, it's clear there are some questions where either the gains were small or more importantly, the final result was not what we might have hoped. I have circled on the attached graph, the questions for which the final average score was <2.5. There are 6 of these questions (#5,20,22,23,31,33). I copy them below.

5. Given the calculating formula for recurrence intervals.
20. Provide the formula for Darcy's law.
22. Explain the variable source area concept.
23. Using the variable source area concept, explain how and why flowpaths will differ by season.
31. Why do floods in the annual maximum and partial duration flow series have different recurrence intervals?
33. Explain why the seasonal distribution of run-off differs between monsoonal climates and cold region climates?

Looking at these questions...they fall into some categories. Two are formulas. Two are related to variable source areas. Two are related to recurrence intervals and the last one requires some pretty extended thinking.

I have used these data to go back to the chapter and focus my revisions of the chapter (along with all your other suggestions!)

The bottom line for me, is that I found this exercise really useful. I am hoping that we will find a way to do it with every chapter because I think it's going to tell us what the students aren't "getting".

I'd like to post these data to the class web site – do any of you object to that? If

so, please respond to me and I won't post them. They are all anonymous.

Thanks for taking the time to do this! It really helped me as an educator improve this chapter.

All the best,

P