Notes from "Talking About Teaching" session:
"Experiments with Ongoing Feedback: Writing and Quantitative Reasoning"
February 17, 2010

Note: The comments here are meant to capture key points of discussion and presentation plus the general tenor of the exchange.

Discussants: Melissa Burch, Cindy Gill, Jennifer Hamilton, Michele Hardesty.
Handouts provided by the discussants are posted at the Center for Teaching and Learning website, under "Resources."

Charlene D'Avanzo opened the session with an appeal to the Dean of Faculty for a regularly assigned time for faculty to meet to discuss pedagogy. She introduced the speakers, faculty who had worked on the Quantitative Skills and Thinking project, and in the Writing Group. She stressed the importance of articulating the goals of a course clearly to students, writing them down, and talking about them. Then there are ways to assess and measure improvement on these goals. The clarification of goals will help faculty to focus, and also help in writing evaluations.

Cindy Gill began the presentation, mentioning that she often hands out index cards to students as an assessment tool at the end of class, to find out if they did the reading, or if they have confusion around a certain point. Usually she asks students to identify themselves on these cards, but sometimes does not depending on the reason for the input.
Big question is how to assess quantitative skills of students – what are we looking for? It's important for students to learn how to incorporate quantitative data into their writing. They need to be comfortable with talking about the information. Is the analysis appropriate? They seem to "get it" or not.
Quantitative information is a representation of the data. It can be given in a graphic or summarized. Can students represent that information visually, in a different way? Faculty need to allow students to represent "what they understand." She mentioned a technique adopted from Nell Arnold and Ellie Siegel – where students are asked to go to the board and draw a picture of their paper. No words are to be used. After complaining about the exercise, students seemed to be able to work with it. A picture was requested from students, and students produced concept maps.
Cindy uses an exercise with students which she calls "ugly, simple, and fast" to help them learn the basics about statistics. The point of the exercise is to address the question – does hand dominance match eye dominance. Students gather data and then learn about "p" value. Once they do this, they begin to feel comfortable about determining statistical significance. Cindy uses software at graphpad (online) to create the basics of the exercise.

On the question of how to map quantitative information, Cindy has two goals:

1) Use students' interests in larger things (applied) to give them opportunities to learn to use quantitative skills; 2) Help students with general numeracy. Faculty responded to Cindy's thoughts, suggesting that they need more time and confidence with statistics in order to teach students in this area, and that there

could be a mentoring process, where faculty could be trained in small groups by others who had more expertise.

Melissa Burch continued the presentation, speaking about the Writing Group and also Quantitative Skills and Thinking (QST), which she had participated in. Her course on cognitive development provided rich feedback in both areas. She begins with asking students to come up with an idea for a project to investigate – reports involving a child, and various media accounts of the incident. Some students begin with a good background in interpreting graphs, and some need support. They must learn to understand if the graph presented is related to the question. In this area, "what is enough" for students to know by way of quantitative skill? In their research proposals, students come to know there must be a certain format and method – (suggestions, predictions, background literature). Rubrics were helpful to Melissa in sorting out how well students were doing. They don't always understand the process. (A link to her "rubric on analysis of a study proposal" is at the CTL website.)
Writing: Faculty need to explain *why* they are doing *what* they are doing. Numbers do not have to be included for something to be called a rubric. A shorter written piece is a good model for a longer one. Twenty minutes spent in class going over how successful a piece has been yields improved results. Being explicit in goals and expectations really helped students. Students need to ask: What are the motivating questions, and be explicit about what they are looking for.
A book was highly recommended to help students learn better writing skills: *The Craft of Research*, by Booth, Colomb and Williams. This covers "what is a research problem," and conceptual vs. practical approaches.
An exercise in concept mapping was described. Forty to fifty pieces (concepts) are given out to students, who are broken up into six groups. Each group works on making a map of their pieces. What comes through is how conceptual things have practical implications. This works very well with a class.
Melissa also suggested faculty look at the research program presented by Paul Bloom, in Art and Theory of Mind.

Jaime Davila mentioned that students can't always see subtle differences within a paper. They are more inclined to see the perspective in black and white – need more practice in taking in all of the various points involved.

Laura Wenk stressed the need to do more theory building, e.g. how a study fits into the larger picture. Is the movement from research to policy or research to theory to policy. We don't necessarily need research in order to make policy. Data can be used in various ways.

Jennifer Hamilton described how she tells her classes that when she read Kant's *Critique of Judgement* long ago, she realized that she highlighted half the text! She could not isolate the truly significant points of the argument. She asks students to do two-page summaries of their papers. She also requires Div. I retrospectives – and students said that this exercise helped them very much. If papers are short, then faculty can handle the workload, give prompt assessment and feedback, which is very helpful. Students need to learn to make a "critical argument". An opinion alone is not sufficient. She says that an *opinion is free* while you *have to work for an argument*!
Students seem to have trouble with the key questions of *why*, and what motivates the writer. If students can learn to identify the key elements in their reading, then they are able to write with more clarity themselves.
Students at the 200 level are asked to write mini ethnography pieces. The formulation of questions will form methods. As an example, in the consideration of autism, what is it that you want to understand? The topic can be approached from many points of inquiry. TAs can be trained to help give feedback to students on analyzing their writing. This way, more assignments can be given, and students will receive prompt feedback, having more opportunity to write and improve. Jennifer has recently created a new rubric so that students will learn the difference between *its* and *it's*. Other rubrics can be created so that faculty and TAs do not need to rewrite the rule of correction each time. Students seem to learn easily in this way.
Jennifer asks students to write six critical reaction papers at the beginning of the semester, during a six week period, in an intensive writing process. She under-scores the importance of telling them why they are being given these assignments, so that they understand and are onboard.

Michele Hardesty offered thoughts on improving student writing. In both a tutorial and a research/writing seminar she has taught, she used various kinds of writing rubrics to give students feedback and help them understand different criteria for evaluating critical writing. In her tutorial, she does weekly writing exercises with students, which provide a strong background for longer papers; she incorporates the skills developed in those exercises in a "**draft response sheet**" that she and her TA use to evaluate longer student essays. In a more advanced research and writing seminar, she assigns a **peer review** that begins with a "**draft questionnaire**" that the writer of the draft completes and shares with his/her peer reviewers. With the help of this questionnaire and a **peer review guide,** the peer reviewer writes a letter to the author of the draft, restating the arguments in his/her own words, explaining strengths and weaknesses, and ending with specific suggestions for revision. This process of working with partners in close analysis of the writing seems to bring great improvement. Michele's three documents are all posted on the CTL website, as noted above.

Laura Wenk uses an exercise with students working in pairs, who write evaluations of the same paper (which one of them wrote). Then the class votes on who wrote the paper. It's interesting that the author of the paper usually does not analyze as deeply as the non-writer of the paper. Laura tells students – "write as you read – and then write across. "