To: Iris Howley, Human-Computer Interaction

From: Ruth Poproski, Graduate Teaching Fellow, Eberly Center

Date: November 21, 2011

Re: Observation of Recitation for 05-410: User-Centered Research and Evaluation

Thank you for inviting me to observe your “User-Centered Research and Evaluation” recitation on November 15th.

The topic of this recitation was the use of Think Alouds in the development of mobile software. You spent the first fifteen minutes of the class providing a review of the previous day’s lecture material, forty minutes in a small group activity, five minutes conducting a wrap-up discussion of that small group activity, and five minutes discussing your students’ term project.

For this class you face the ongoing challenge of lack of preparation time since you usually receive the professor’s lecture outline on Sunday evening, attend the lecture on Monday afternoon, and meet with your fellow teaching assistants on Monday evening to plan your Tuesday recitation. In what follows I have taken this challenge into account, and I focus on three areas of teaching, highlighting your strengths as a teacher and offering some suggestions for future teaching strategies.

**Strength: Providing Structure and Instructional Cues**

Research has identified several important features that enhance the effectiveness of lectures, by addressing cognitive and motivational needs of students, and by making lectured material more understandable and more engaging. Among these features are the use of instructional cues and transitions within a well-structured lecture. These are (usually verbal) markers that clearly signal important, challenging or counterintuitive points, or that signal transitions from one subtopic to the next, from a general theory to an example, or from concrete observations to abstractions. As novices, students need help navigating the content, and these cues help them organize the information in their brains.

In the recitation that I observed, this is an area in which you excel. Your slides were well-organized and served as a guide for your students through the material you were covering. In addition, you frequently gave verbal cues such as “If you were in lecture yesterday…” and “Does anyone remember…”, which effectively reminded students of material that had been covered during the previous day’s lecture, helping them to join you in that day’s work. Throughout the class you acted
as a guide for your students, thereby drawing them along with you, and providing ample opportunities for students to re-join you as their attention drifted (as it is apt to do).

**Strength: Student Engagement through Questions**

Through the introductory fifteen minutes of your class you asked your students four questions and received responses from four different students. In addition, you received four distinct questions from three different students. In the wrap-up portion of your class you asked three different questions and six different students engaged in the discussion. By the end of the class nine of your fifteen students had participated in discussion in the large group format.

This level of student involvement is a good starting place, and speaks to your approachability as an instructor and the atmosphere of student engagement that you have fostered in your classroom. In addition, we know that the more actively engaged students are in their classes, the more likely they are to learn and retain new knowledge. In other words, your comfort with using questions in the course of your class contributes to your effectiveness as an educator.

One particular moment that stood out to me occurred when you asked, “Can anyone explain Think Alouds?” No one answered the question, but rather than answer the question for them or pick a particular student to attempt an answer, you waited comfortably in silence for about ten seconds. This paid off when a student offered an attempt at an answer, even though she was not confident that she had a correct answer.

By taking the time to wait, you allowed students to think through your question, and you gave them some responsibility for their education while not causing any one individual to feel singled out.

Since you already find ways to incorporate questions into your dialogue with your students, it is worth thinking about how to use them more, how to incorporate them into different phases of a lecture, and how to intentionally use different types of questions to engage your students in the learning process.

The seven questions that you asked during this recitation all fit into the category of *exploratory questions*: these are questions that aim to elicit facts and basic knowledge from your students. In the introductory portion of your class you asked your students for information about Think Alouds, and about the differences between Talk Alouds, Think Alouds, and Mediation. Your questions were aptly focused on helping your students review material that had been covered in the previous day’s lecture. In the wrap-up portion of your class, when your students were reflecting on their experience with the small group activity, you asked them about their experiences and pushed them with questions about what it was like being the user in the exercise, whether anyone felt judged, and what they liked about the experience. Other good exploratory questions for reflection include questions about problems that were encountered in the execution of the Think Aloud activity, and information about tasks that worked well or poorly.

Your students were responsive to your questions and engaged in some discussion, but the use of carefully planned alternate questions would likely have extended the discussion further, helped your students make deeper connections between theory and practice, and engaged more students in the discussion.
For example, prediction questions and hypothetical questions ask about what would happen if something is changed or altered, helping students to think beyond their own experience, and to investigate alternate theories. Rationalization questions ask students to give reasons for various phenomena, and force students to provide more in depth answers. Relational questions ask for comparisons of themes, ideas and issues, and provide students with the challenge of making connections in content that they may not otherwise make.

There are, of course, plenty more types of questions, and it takes some experimentation to discover which types work best for you in which situations. The key is to think through the purpose of your questions, and to gradually incorporate more challenging questions into a discussion in order to move students along the path of learning. With your already keen sense of engagement through questions, building in a wider variety of types of questions is a natural next step for you.

**Reflections on the Small Group Activity**

The bulk of your recitation was spent in a small group activity where students designed tasks for their classmates to complete on their cell phones, which they then executed as Think Aloud evaluations. You were nicely prepared for this exercise, with a handout detailing the activity, and an ability to flexibly yet quickly divide your students into groups. In addition, you interacted well with the students as they progressed through the activity, answering their questions and prompting groups that finished early with extra tasks and some reflection questions. Overall, you managed your students well, and your presence was a big part of the success of the exercise.

After you had split the class into groups, you distributed your handout and let your students read through it and proceed on their own. As a result, a number of details and clarifications were communicated on a group-by-group basis, as particular groups asked particular questions. Several of these questions were asked by multiple groups (for example, whether to read the whole script or not, and how much time they had to spend with each phone). There were no major problems that resulted from this approach, but a better strategy would have been to run through the handout with your students before splitting them into groups, providing more details and clarifications for the group as a whole.

This does three things. First, it allows all students to hear answers to questions that are asked, potentially clearing up misunderstandings before they become an issue. This is particularly important when students make incorrect assumptions and never get around to asking questions. Second, it ensures (as well as possible) that all students begin the activity on the same page. And third, it deals with the fact that different students have different learning styles: some do best when they read information while others do best when they are given it verbally. By giving them the handout and supplementing that with a verbal explanation, you immediately communicate your information in two distinct ways, speaking to two different types of learners.

All told, this should bring a new level of comfort and ease for your students, thereby allowing them to engage more quickly and more effectively in the small group activity.

**Concluding thoughts**

Overall, your approach to this recitation was thoughtful and effective. You demonstrated an ability to be flexible within a solid structure, and an ability to engage your students in the learning process, thus sharing responsibility for their education.
Since we met to discuss the contents of this memo, it will count toward your requirements for the Documentation of Teaching Development program.