

## **Making the Shift: From Gut Instinct to Meaningful Evaluation**

An interview with Cameron Wake, University of New Hampshire, Durham, NH by Sabra Lee

*What assessment and evaluation allow you to do is to move from relying on instincts about how well you are teaching and what students are learning, to being able to measure how you are teaching and how they are learning the material.*

*When you began teaching, how did you assess your students?*



Initially I did standard evaluation to evaluate my students and didn't pay much attention to the results as long as they were not horrible. I had gone out of my way to learn how to teach better through our [UNH] Excellence in Teaching Program. I took the "Issues in College Teaching" from Lee Seidel, who heads the program, but I didn't address evaluation.

*What caused you to change your thinking about, and approach to, evaluation?*

It was writing the ESSE proposal and addressing the issue of performing quantitative evaluations of student learning that has changed my view. Once the ESSE RFP came out there was an explicit section requiring a "a plan for both formative and summative evaluation." I said, "What the hell is a formative versus a summative evaluation? What is the difference between assessment and evaluation?" That is when I went to Lee and said "Can you help me out here, because I don't know what they are talking about. How do I make this part of the proposal? Lee mapped out a plan for detailed evaluation and even brought resources to the table in the form of a graduate assistant. He also helped us develop the student learning objectives against which we did our evaluation and he provided us with the tools to do the assessment. At the same time, I also took his course in assessment and evaluation.

*What do you think the difference is between assessment and evaluation?*

For me the difference is that assessment is collecting the data, while evaluation is looking into the data and figuring out what it is telling you.

*So Lee developed the tools. What happened once you used them?*

We began to appreciate [the tools] once we began to use them. The first time [the importance] of an analysis of the data came to light was with the simple 20 questions that students filled out responding to the course structure, content, the readings, and the professors. This was done mid-semester, and they ranked aspects of the class on a scale of 1-5 (see link below). When the results came back we found that for the most part we did pretty well, except on issues related to our readings. We went right back to the students and asked, How we should change the readings? And they said, "We want to take more responsibility for leading the discussions." and "We will take turns leading the discussions and then write a summary of the discussion so we can use it to study

for the exam and learn more from the discussion.” So the assessment was turned into a new activity to help students learn and also an activity that created peer-to-peer learning networks.

The second "ah ha! moment" was when we wanted to write a paper for Martin Ruzek's special issue on ESS education about our success in reaching the student learning objectives we had laid out in syllabus. We thought that we had taught a good course and the official university evaluation indicated we were reasonably good professors. But when we wrote the paper to *show* we had been successful, we suddenly understood why we had collected this assessment information. It let us ask, "Were labs successful?" We could go back to those instruments and answer this question objectively with what the students said. We had Lee and a graduate student do an exit survey (see link below) to get at some more esoteric issues that were not black and white, such as, "Will this class help you out with your research? Was this a good class for you to take?" These questions don't give you yes or no answers.

*What are your assessment goals?*

They haven't changed. Ultimately all assessment and evaluation is done against the seven learning objectives we developed, and we want to know if the students have met these. Establishing clear student learning objectives is essential for developing and evaluating an effecting class as they frame the semester give us a concrete goals to work toward.

*What would you say to convince someone that it is important to do this kind of assessment?*

If I was talking to a scientist I would say it is the difference between having data and not having it, between having a hypothesis and testing the hypothesis. What assessment and evaluation allow you to do is to move from relying on instincts about how well you are teaching and what students are learning, to being able to measure how you are teaching and how they are learning the material.

*Do you want to talk about any specific evaluation tool and its value?*

If there is one key thing I could tell someone it is the importance of the exit interview done with several students as a focus group without the professor(s) present. We obtained a wealth of information from our exit interviews. The information provided in this open format was superb. The criticisms were not always pleasant to hear, but they were quite valuable.

Something that we do not talk about in our assessment plan (see link below) but use in our paper (see link below) is the formal assessment of student learning – the exams and quizzes. They were not part of our initial assessment plan, but we went back connected each exam question a to a learning objective and that was one way to quantify how we were reaching our learning objectives. We graphed the information based on *learning objectives*, not *student learning* and it was very valuable for us.

*A Design Guide for Undergraduate Earth System Science Education*

Mid-semester questionnaire

[LINK](#)

Exit Survey

[LINK](#)

Course Assessment Plan

[LINK](#)

JGE Paper

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