Science and Math Open Meeting

Notes

April 20, 2016

Present: Steve Bogaerts, John Caraher, Bridget Gourley, Jeff Hansen, Pascal Lafontant, Sarah Lee, Melissa Petreaca, Selma Poturovic, Pam Propsom, Mamunur Rashid, Jackie Roberts, Maria Schwartzman, Brian Wright.

Senior Day: need volunteers to help proctor the science literacy test (Friday, May 13, about 11:00ish to 1:00ish, probably less). We can give you pizza. Contact Jackie or Pam if you’re willing to help.

Summer Workshop. Alison Williams one-day summer workshop will be Monday, June 13. We’ve had complications in scheduling Melanie Cooper so we may put off that workshop until next summer.

Discussion regarding high-structured courses. We had sent the article by Haak, HilleRisLambers, Pitre, & Freeman (2011), “Increased structure and active learning reduce the achievement gap in introductory biology,” *Science, 332*, 1213-1216. This began a discussion, with Steve Bogaerts sharing a handout and his rationale for instituting daily quizzes in CS1. Some of the impetus was the book *Make It Stick: The Science of Successful Learning* that he encountered in a reading group. His impression was that students were reading only immediately before exams and were therefore unprepared for class and assignments. He has found daily quizzes to be very effective and students tend to be pretty positive about their value.

John Caraher stated that he uses daily individual quizzes, which then students do in groups. This produces good energy in the room and then usually he doesn’t even need to lecture or talk about the material because the students clarify it for each other. Pascal Lafontant says he uses quizzes to force students to read/be prepared. He conducts them with an oral presentation of the questions so he can re-use the quiz questions in future semesters. In his upper-level courses he uses longer, 15-minute quizzes. Sarah Lee discussed her successes and challenges with daily quizzes. She had them on Moodle and students had to complete them by midnight before every class period. Her challenges were that the quizzes took her at least an hour a day to grade. An advantage was that the questions were complex enough that she knew what the students didn’t understand and then they could focus more deeply on that material in class. People offered suggestions for how this daily quizzing could be made more manageable: using the written responses from last semester to convert these into multiple choice questions, maybe just randomly choose quizzes to grade, provide oral feedback or an answer key in class so the instructor doesn’t have to write comments on every individual student quiz.

Bridget Gourley shared the idea about getting students to write on index cards regarding the clearest and “muddiest” points of a class session. The instructor can then review them and address the unclear topics during the next class period. Jackie Roberts talked about her use of daily open notebook/homework quizzes. She uses in-class quiz questions with the ABCD cards, asking about topics she knows students typically have trouble with. She also uses worksheets in class, often based on old exam questions; sometimes she collects these for points. Jackie also indicated that she has students write exam questions and assess the level/type/difficulty of the question; they typically get better at this as the semester progresses. Brian Wright uses weekly “quizzes,” but sometimes they’re longer and more like tests; can be 15 minutes to entire class period. They are graded by the students and they essentially get credit if they do them. Then the students work with a partner on the material. The classroom is more dynamic and he feels that it leads students to ask more questions.

A final issue that we discussed is how we scaffold from these high-structure activities to greater student independence. Sarah suggested the book *Creating Self-regulated Learners*.

If you have great websites from which you draw instructional resources, please feel free to send them to Jackie and Pam and we’ll try to get them up on the *WISER* website. In addition, if you have ideas for directions or topics you’d like the science and math division/curricular area to pursue, please feel free to share them with us.