Training Biomedical Postdocs in State-of-the-art Teaching Strategies
Rebecca M Price
beccap@uw.edu, School of Interdisciplinary Arts and Sciences, UW Bothell

Context
The Science Teaching Experience for Postdocs (STEP) program at the University of Washington provides teaching experiences for biomedical postdocs with 100% research appointments. The program’s mission is to mentor a diverse pool of postdoctoral fellows who are dedicated to teaching scientifically with inclusive, demonstrably effective, student-centered pedagogies. Postdocs attend three short training sessions that introduce state-of-the-art teaching strategies that are effective for students and time-saving for instructors. After the training, they work in teams of three to co-teach a seminar, with each postdoc leading only three class meetings. A mentor observes each class meeting and then discusses the strengths and weakness of each meeting with the team.

Research Question
Do the postdocs learn from observing each other? If they do, then the third instructor in a course will score more highly on the scoring rubric than the first instructor.

Methods
I scored observations that the mentors wrote about each class meeting in five classes to compare performance of the three instructors with respect to the (1) the array of cognitive challenges used in each class meeting, (2) the amount of student engagement in the best three activities, and (3) the alignment between the learning goals for a class meeting and the activities completed in class and for homework.

Results
In-class activities cover many orders of cognition (knowledge, comprehension, application, analysis, synthesis, and evaluation). The breadth of coverage is statistically indistinguishable between first and third instructors (F-test, Mann Whitney U test).

The learning goals for homework and in-class activities are well-aligned for all three instructors, and are statistically indistinguishable from each other (F-test, Mann Whitney U test).

Discussion
This pilot study suggests that STEP fellows do learn from observing each other teach. However, there are limitations to the data used in this pilot study:

• The observations are written as a learning tool for the postdocs, more than as an objective evaluation tool.
• The data are biased—I have a vested interest in the success of the program, so my observations are biased towards demonstrating success.
• Many of the postdocs score highly on the observation rubric after their first class, making it difficult to quantify improvements.

A more sophisticated protocol for data collection must be implemented in future studies.

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