Reviewer's report

Title: Multiple tutorial-based assessments: a generalizability study

Version: 1 Date: 3 September 2013

Reviewer: Danette McKinley

Reviewer's report:

This paper is an interesting application of generalizability theory to a problem in measuring competencies developed during the course of problem-based learning. There were aspects of the data that made modeling of certain facets impossible, and resulted in about half of the variance in the model being unaccounted for. That said, I wondered more about the scoring of the instrument, and what facets could account for some of the variance which was left currently unexplained.

- Major Compulsory Revisions

The author must respond to these before a decision on publication can be reached. For example, additional necessary experiments or controls, statistical mistakes, errors in interpretation.

1) Unit scoring was clear, but how were clinical domains scored/included in the model? Additional clarification on this component is needed.

2) Clinical skills were eliminated for Year 1 data, but included for Year 2 since the measurement occurred across all units. Is this a possible reason for the difference in variance components for clinical domain from Year 1 to Year 2 (0% vs. 4%)?

3) I am assuming one observation per unit, per domain (3 for Year 1 and 4 for year 2). Is that correct? A sentence or two on scoring would clarify more about the design chosen for the generalizability analysis.

- Discretionary Revisions

These are recommendations for improvement which the author can choose to ignore. For example clarifications, data that would be useful but not essential.

1) Since no information by tutor was collected, does this mean that data by student group within unit was not collected either? This would need to be mentioned as an additional limitation of the study.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable
Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.