Reviewer's report

Title: Electronic Voting to Encourage Interactive Lectures: A Randomised Trial

Version: 1 Date: 25 February 2007

Reviewer: James Wofford

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General

---The manuscript and offers a useful experience and a honest opinion on the value of this technology in education. Whether the study design support the conclusion is debatable. All components of the manuscript can be improved, as is itemized below.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Abstract

---The goal of the study should be restated (see below). The emphasis on professors who were previously not familiar with EVS, while important, should not be the major focus with a study of only two professors. A study with more lectures and lecturers would be necessary in order to discern whether teacher style versus the technology involved was related to the outcomes. For this reason, a more general goal of the study should be offered, in my opinion.
---The wording of the abstract does not make it clear whether one group was randomized to both EVS lectures, and one group to traditional lectures, or whether one group got a cervical CA EVS lecture and breast CA traditional lecture, and the other group the cervical CA traditional lecture and the breast CA EVS lecture.
---The abstract should offer more detail about “student evaluation” questionnaires and the independent observer methodology. State that the “student evaluation” questionnaire is standardized in the institution.
---The abstract should state the number of students randomized and the number excluded from analysis, and the number actually analyzed.
---The second line of the conclusion speculates a bit more than the data can support.

Background

---The history and dilemma at the Univ. of Adelaide (and the reference to it in the third paragraph) is better placed in the “Setting” subsection of the Methods section. This would allow the reader to better focus on the value of the technology.
---Is timetable a verb, and is whole-of-class a word?
---The stated aim at the end of this background section is a better statement of the rationale of the study than that offered in the abstract.
---Delete the last sentence of the first paragraph. Cataloging other teaching strategies is better done elsewhere.

Methods

---Use “Setting”, “Outcomes” as subheadings in addition to the ones you already have.
---It would be useful for the reader to know how prevalent EVS lectures were at your institution before the trial was undertaken.
---The terms “national status” and “international status” are used interchangeably. Define this better for the international readership and be consistent throughout the manuscript.
---How many times were the lectures actually given during the years and how many students per session? This would give readers of how practical the observation component is.
---Why were these lecturers chosen to participate in the trial? What were ratings of lectures from these two professors before the trial? For example, had they received teaching awards?
---It should be stated in the Methods section when exactly was this trial conducted? Throughout the year 2006?
---Were the same questions used on the MCQ before and after the lecture and weeks alter, or were questions randomly selected for each quiz? It is not clear how the MCQs were scored and yet numbers are presented in the results section.
The potentially confusing term “student evaluation” is used in the abstract, while in the methods section it is termed student opinion. SELT is used still elsewhere in the manuscript. It should be stated as a institutional standard in the abstract.

Specify what questions were on the lecturer opinion questionnaire.

Results of the “snapshots” of attitudes of students and lecturer are not presented. While this reviewer is curious how this was carried out, discussion of this could be omitted entirely.

Since there are only two lecturers, statisticians might object to the analysis that does not take into account clustering by professor.

Was stratification part of the randomization scheme, and when was randomization assigned?

“A level 2 interactions was considered a baseline” might be better expressed “we considered a level 2 interaction as a meaningful interaction.

Results

---Why did 45 students not participate in the lectures? Were these students who were off campus or were these simply the absentees?
---There is no statement of the comparison between EVS group and traditional group in the text of the results section. Instead, the reader is referred to Figure 1, which still needs some interpretation.
---Because there were only two professors, it does not seem appropriate to say wide variation in opinion (p. 6, para 3)
---The order of the tables should be consistent with mention in the text.
---Table 2 is not clear. It resembles a table from the author’s previous publication, but the table is not understandable in the context of this paper without further explanation. What is meant by student tutorial dynamics? How do tutorials relate to the lectures? Time spent per case? How does the case length relate to the lecture? What does order of lecture mean? What does “different” student mean? What does L1 and L2 mean? Additionally, there should be some reference in the text to Table 2.
---Table 3 is not necessary and potentially confuses the reader. Since there is a high correlation between board scores and the MCQ performance, what is most important is a comparison of 2005 scores between the EVS group and traditional group, but this is not stated either in the results or in the abstract. Better yet, a table that shows baseline comparisons between the two groups on international status, gender, and previous scores might make it simpler for the reader.
---Table 4 should signify that these are SELT scores. While it sounds as if rank order and the mean rank score are standard statistics, to a reader not familiar with the SELT, how these statistics are derived should be part of the methods section. How are all the comparisons statistically significant when in some comparisons, there is very little difference (i.e., enthusiasm scale for breast cancer lectures
---In Figure 1, the y-axis is not labeled correctly.

Discussion

---The discussion is too long, in my view.
---Lessons from the author’s previous study of EVS (potential isolation of the lecturer, reduction in note-taking behavior) could add to the discussion of the current trial.
---It might be useful to know what has happened since the trial. In our own institution, enthusiasm for this technology waxed and then waned for unclear reasons.
---Just another tool that may or may not suit the style of the professor.
---There are several references in the medical literature using a similar “audience response system” that might add to the discussion.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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 interest