Reviewer’s report

Title: Assessment of an electronic voting system within the tutorial setting. A randomised controlled trial.

Version: 1 Date: 1 February 2005

Reviewer: Geoff Wong

Reviewer’s report:

General

This study reports on a novel use of technology in an attempt to make teaching more stimulating for students in a small group setting. The authors have thought hard about potential confounding factors (e.g. novelty value, timing sequences) and bravely tried to get around these by use of randomised allocation of students and alteration of the timing of the EVS intervention. The Background and Discussion sections are informative and cover many issues relevant to the use ‘technology’ in teaching, along with the advantages and disadvantages of employing such aids in teaching.

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

The authors have reported that the EVS intervention, "... may improve educational outcomes." This conclusion is rightly tentative as a number of issues may well affect the validity of this finding. Though the claim is not made strongly the following issues do need to be addressed in order for readers to be able to decide for themselves;

a) We have little information about the baseline characteristics of the 102 students who took part in this study. A table outlining, at minimum, information such as age, gender and prior academic performance would assist readers in ascertaining if the randomisation was sufficient and the two groups equally balanced at baseline. This is an important issue as it is, at present, not possible to tell if the findings in tables III and IV (which relate to test performance) might not be due to just having 'smarter' students in the intervention group.

b) We do not know anything about the reliability (especially stability to test-retest) of the assessments used. The authors point to unusual findings, "At pre-test for the topic of the acute abdomen, the students who had EVS for this topic had significantly different pre-test scores from those students who did not. This observation cannot be explained...". This sort of unexpected finding might be as a result of the MCQ used having a low reliability and hence be a chance finding. Overall, without reliability data for such all of the tests used, it is still possible to conclude that some of the significant findings found in tables III and IV might still be due to chance. Also without such data, it is impossible to ascertain if the sample size was sufficient for this study.

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

The authors have decided not to briefly summarise their findings in the first paragraph of the Discussion section. Doing so may well make this paper more easy to follow.
In the discussion section further sections entitled 'Strengths of this study' and 'Limitations' of this study' may well help with the readability of this study.

Discretionary Revisions (which the author can choose to ignore)

The instrument used to observe the level of student interaction (as shown in table II) is rather crude and possibly very blunt. The data provided was also only collected by one individual (hence being very prone to observer bias). I am this not sure how much we can make of this data.

It would be interesting to hear about the authors’ reasons for conducting this study in a small group setting, when they clearly acknowledge that a greater effect size might have been evident when class sizes were larger.

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: No

Declaration of competing interests:

I declare that I have no competing interests.