Reviewer’s report

Title: Learning the facts in medical school is not enough: Which factors predict successful application of procedural knowledge in a laboratory setting?

Version: 1 Date: 26 August 2012

Reviewer: NKEIRUKA AMEH

Reviewer’s report:

Major Compulsory Revisions

Methods

The point about a pilot study being done should be brought up early in the methodology rather than burying it within the text.

Participants: 80 students in 3rd – 5th clinical years were included in the study: how many students are in each class out of which 80 were included? Of the 80, how many were from 3rd, 4th and 5th years? How were the 80 students selected for participation in the study? How representative are the 80 students of all the students in the clinical years?

What clinical rotations/postings/exposures have the students in each year had? In this regard, it will be important to detail the clinical training of medical students in Germany, especially, considering that prior clinical exposure was one of the 2 significant independent factors which influenced performance in procedural knowledge tests.

Study design: It is indicated that …’all subjects were repeatedly exposed to 30 electronic flashcards…..’ What does repeatedly mean? It’s important to specify the number of times and for how long each time they were exposed to the flashcards.

What was the distractor used in the cognitive distractor exercise?

Within what time frame were participants expected to actively recall the 30 flash card items? This is important because the reaction time of students in a typical medical school class vary and not the same for all students. There is always fast, average and slow students but majority are often in the average group. The typical time frame for reaction surely would have been ascertained in the pilot study and the time should be given here.

Students had to solve 3 key feature problems: how much time were they given to do this? If indeed they were given a time frame within which to solve the problems, the time should be mentioned, as perhaps would have been determined in the pilot study.

Discretionary Revisions

Contrary to the authors' ascertain that the sample size was rather large, I feel that a sample size of 80, for 3 different clinical years, is small, and this is further
limited by the fact that no information was provided on the numbers of students in each clinical year, out of which the 80 were included in the study. This small size would limit some of the conclusions made. They should rather recommend that a future similar study be done with a larger sample size, and perhaps using multiple centres. Their study obviously is a useful initial lead.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests