Reviewer's report

Title: Comparison of knowledge levels of medical students in problem-based learning and traditional curriculum on public health topics

Version: 2 Date: 4 December 2004

Reviewer: J. F. Arocha

Reviewer's report:

General

This paper attempts to determine differences in medical knowledge between students trained in a traditional medical education curriculum and those trained in a problem-based learning curriculum. The paper starts by providing some information about changes in the medical curriculum at universities in Turkey. There is no review of the literature in the beginning part of the paper. The study is then described in a short methods section. The basic instrument for comparison is a multiple-choice questionnaire containing 25 questions on selected public health topics, such as communicable diseases, epidemiology, child and mother diseases, and others. These topics were selected because were are taught in both curricula. The results showed that problem-based learning students scored somewhat higher overall (mean scores of 65 and 60.5 for problem-based learning and traditional, respectively. This result is consistent with other studies showing a small advantage for the problem-based learning curriculum over the more traditional one. In the final part, a discussion of the study in the context of previous literature is presented. Generally, the paper is well written and laid out.

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

I will list the major questions I have regarding the paper:

(1) The previous literature review comparing traditional vs problem-based learning curricula is extensive, including several reviews. I believe that mentioning and discussion of this literature should be made in a literature review section.

(2) It is usually recognized that problem-based learning curricula vary in details from one school to another. Given this, a description of the problem-based learning process and the curricular differences between the two programs compared may help the reader to better understand the types of activities that students trained in one curriculum or the other go through.

(3) One assumption of curricular comparison studies, included this one, is that students will do better either in one or the other type of curriculum. However, each curriculum demands different skills and deployment of learning strategies from the students. This is important because, it is well known in the educational literature that not all students do well in one particular learning program and that they do better when the program adapts to their preferred way of learning. The studies of learning styles may shed light in why the differences between performance scores are always so close when medical curricula are compared.

(4) The researchers use a set of t-tests to compare performance between the groups. I wonder if an F-test would be a better strategy, given that of a comparison of 9 t-tests, one or more may result
statistically significant by chance. The authors may consider consulting a statistician on this matter.

(5) The authors should provide the questionnaire they used in the study (in an appendix), or some sample questions. This would allow the reader to have a sense of the type of knowledge that the students were tested on.

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 title of the paper indicates "knowledge levels." However, in the knowledge test, no levels of knowledge are described. The test lists areas of medicine but not levels. They may consider drop the word "levels" from the title.

p. 8, 4th paragraph, second line from the bottom. Text says ..."determined community's main health problems ..."). Consider instead "determined an approach based on the community's main health problems ..."

p. 11, second whole paragraph the text says "Actually, we expected much more difference..." may be changed to "Actually, we expected a much larger difference..."

Discretionary Revisions (which the author can choose to ignore)

A question for the researchers: The students in the problem-based learning curriculum belonged to the first cohort to receive this type of education. What effect, if any, the authors think the fact that these students were the first to be part of a new curriculum might have played in the way they scored? One can think that both students and instructors would be more motivated given the novelty of the approach.

What next?: Accept after discretionary 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

Declaration of competing interests:

I declare that I have no competing interests