Reviewer's report

Title: Teaching statistics to medical students using problem-based learning: the Australian experience

Version: 1 Date: 17 September 2004

Reviewer: Peter L Schwartz

Reviewer's report:

General

I think that this is an interesting short article. Although I have not been directly involved with true problem-based learning or with the teaching of statistics to medical students, I am well aware of the important issues in both of these areas. I have also recently reviewed for another journal a paper dealing with the teaching of statistics in medical school. Even in my everyday contact with medical students, I rue the fact that many of them have only scant insight into the implications of the statistical data that underpin the principles and concepts that they are learning. I also am aware of the importance of learning material in context. Hence I am very sympathetic to the arguments put forward in this paper. In particular, I can appreciate the author’s concern about PBL courses in which statistics is either taught separately from the main activity or as a parallel course. I agree that these methods would seem to be an invitation for ‘statistics and research methods [to be] marginalised in the medical curriculum’.

I found myself particularly in sympathy with the author in some of the parts of the Discussion. At my own medical school, a group of us have been in the process of developing a new case-based curriculum, that, while not true PBL, would have many of the important features of PBL. As has the author of this paper, we concluded that it was more important to teach students about how to understand research publications than to analyse data, that we could design cases that led to research and evidence questions, that some of the cases would not be individual patient vignettes, that statistical and research components would be explicit parts of many of the cases, that the students should immediately recognise the need to understand issues of statistics and evidence when they worked with the cases, that teaching would be by involvement rather than lectures, and that the students would be expected to engage with the material before resource sessions. I think the main concern I have about all of this is the same as we observed with our own colleagues: lack of motivation to make such changes and a persistent feeling among them that it is more important for them to have time to ‘transmit’ all the important facts from their disciplines than to sacrifice time for another activity that seems to them less important. Thus I am pessimistic about the possibility that this paper will have much influence, despite what I see as some excellent suggestions in the last few paragraphs of the Discussion.

I think that the main question I have about this paper is whether it really should be considered a ‘research’ paper, or whether it would better be called a ‘debate’ article. Even though the paper is divided into the usual research article headings, I feel slightly uneasy about the apparent ad hoc nature of the study and the lack of review or discussion of other pertinent literature on the topic. It reads like one person giving his opinion on a particular issue. While it may be a reasoned, sound opinion, it is still only one person’s opinion and to those in the other camp, it could appear to be as one-sided and parochial as their arguments would appear to the author of this paper. For example, I could well imagine teachers at a few of the medical schools named by the author being a bit miffed at the suggestion that ‘anatomy, biochemistry and physiology have to catch up’ at the University of Western Australia to fit in with the PBL style of teaching of public health related subjects. While I...
admire teachers who are enthusiastic and committed enough to introduce their own PBL program in
the face of apathy or antagonism from others (and I have developed a name for myself for having
done similar things quite a number of times at my own medical school), I still recognise that a PBL
course that includes only public health issues and ‘marginalises’ the basic sciences hardly qualifies
as a true PBL course.

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

None

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

I have a number of minor suggestions for the author before the paper is published. In the next-to-last
paragraph of the Background section of the paper itself, the second sentence should say ‘This is
particularly suitable’ (rather than ‘particular suitable’). In the first sentence of the Methods section, I
assume that the author means that he spent one to three weeks at EACH of most of the medical
schools in Australia. In the third paragraph under ‘Material integrated but separately taught’ (in which
I thought, by the way, that the author made some very good points, asked a very good question and
got some pretty poor answers), the sentence ‘They must be familiar with the terms, if nothing else’
should start with a capital T. A little further along, second paragraph under ‘A parallel course’, I would
suggest that there are no such things as ‘PBLs’. I assume it would be ‘an attempt to link this to the
PBL cases’. In the Discussion, third paragraph after the bullet points end, starting ‘So how can we do
it?’, in the middle of a sentence it should read ‘exclude these subjects SO that their own etc’. Finally,
might I ask that the author ensure that the names of all the people in the Acknowledgements are
correct? I have heard of a few of them and I think one is Julie (rather than Julia) Byles.

Discretionary Revisions (which the author can choose to ignore)

In the Background section of the Abstract and in the first paragraph of the Methods section of the
paper, I’d prefer to see the word be ‘curricula’ rather than ‘curriculums’.

What next?: Accept after minor essential 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:

None