Reviewer’s report

Title: Challenging students to formulate written questions: a randomized controlled trial to assess learning effects

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Reviewer: Rashmi Kusurkar

Reviewer's report:

Overall comments
The authors have executed an interesting study with a nice design. My main comment is that the authors need to be cautious while stating that their intervention was directly responsible for the performance outcome. They are justified in suggesting the possibility, but should not make strong claims for the same. The article is definitely publishable, but with a recognition of the limitations of the study.

Apart from the specific comments below, I have provided suggestions in the text in the pdf version of the manuscript.

Abstract
Well-written.

Introduction
The introduction is well-written. I suggest to add the effect of this intervention on student intrinsic motivation, especially because the authors link the differences in male and female motivation to the learning outcomes in the results and discussion. (Discretionary revision)

Methods
I find the intervention too small to conclude with certainty that this intervention actually resulted in a better performance.

Also, if the authors performed the intervention only during the “tumour progression” session, I find it strange that they chose the score on “tumour pathogenesis and progression” as an outcome measure. I suggest that the authors rerun their statistics after extracting the scores of the students only on the examination questions assessing “tumour progression”. (Major compulsory revision)

Results
Well-written.

Discussion
The discussion section needs complete reorganization. (Major compulsory revision) I suggest to delete the subheadings in this section. They interrupt the
flow of the discussion.

I suggest the following structure in the following sequence: what this study adds to the literature, summary of findings along with comparison to other studies having similar or different results and explanations for the same, the interpretation of the effects of gender, implications of the study for educational practice, strengths and limitations.

I suggest rewriting the limitations section. I think the authors should highlight that their intervention was a small (one ten minute question generating session) and hence there is a chance that the results they report are coincidental. (Major compulsory revision) The limited generalizability of these results is, in my opinion, the second limitation of this study.

Conclusion
Reasonable.

References
Reference 19 has been quoted again as reference 36. I think the authors meant the following reference:

The other references seem to be in order.

Use of language
Needs a grammar and language check.

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

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.