Reviewer's report

Title: Applying a hybrid team-based and lecture-based learning method to neurology clerkship in China

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Reviewer: Jennifer Mary Weller

Reviewer's report:

This manuscript describes a comparison of “Lecture-based learning”, “Team-based learning” and a combination of the two. 127 medical students were randomly allocated to one of the three groups, provided demographic data and a pre-test score, and then underwent their 2 week clerkship. At the end they were tested in clinical skills and in theoretical knowledge. The group that had the most exposure to instruction (TBL+ LBL) unsurprisingly did the best. The comparison of interest – LBL and TBL showed the LBL was more effective in improving clinical skills, but not theory. Overall satisfaction with pure TBL (the TBL only and combined TBL/LBL group) was less than the satisfaction of the combined group with the combination they had experienced. The satisfaction of the LBL group was not reported.

The authors are to be congratulated on their efforts to compare two different teaching methodologies. The introduction provides a good review of the existing evidence on TBL and LBL. However, there are a number of questions over the methodology.

Major Compulsory Revisions

Methods

1. The authors contradict themselves regarding ethics. Page 5 states ethics approval was not formally sought because medical students were not perceived to be vulnerable. This is not consistent with views of ethics committees in many countries and would be problematic for publication. However, on page 9 the authors provide and application number for a formal ethics application. Please state what actually happened. Offering different teaching to groups of medical students with the expectation that one form will result in improved test scores should at the least be acknowledged as an issue and the action justified.

2. Was the sample the whole class?

3. Please describe what a clerkship involves in your university and how many years in the medical program i.e. are 4th year students in their final year?

4. The curriculum contained within the teaching for the three groups doesn’t appear to be the same. The content of the practical and theoretical examination not provided. It may be that the content was better covered in one or the other and more closely aligned to the exam. It appears only one group was provided with learning objectives. Please describe the curriculum content addressed in the three groups, and describe the assessments.
5. The teaching methodology for the LBL group is unclear. The students went into the patient’s room and the teacher demonstrated history taking and examination. Were all 43 students in the patient’s room? How often did this occur? It appears that only the LBL involved a demonstration of how to take a history and do an examination. Perhaps this explains the difference in scores between the groups.

6. How much instructional time was provided to each of the three groups? Was this time comparable?

7. Only the TBL and combined group completed a questionnaire. This seems like a methodological flaw as no comparisons can be made between the groups to answer any of the differences raised by the authors between TBL and LBL. Perhaps the LBL group were very satisfied with their experience.

Results

8. How do the authors account for the lower scores in all group for the theory test following the clerkship compared to the pre-test?

Discussion

9. This tends to repeat the introduction and doesn’t say what this adds to the existing literature. Unfortunately, the results of this study shed no light on the advantages and disadvantages of TBL / LBL as no comparative data has been obtained apart from test scores in TBL vs LBL and I am concerned that the LBL is not actually a lecture, but a very explicit demonstration of how to take a history, examine a patient, and make sense of the findings.

10. The authors contradict themselves again on page 13 – suggesting that TBL students pend loner on sutyg and discussion and consequently tend to spend less time on class preparation, but on page 12 they claim that in LBL, students learn passively without proactive preparation. However the authors provide no evidence to support either position so this isn’t relevant to the study really. The last paragraph of the discussion is purely conjecture, with no evidence to support the claims.

11. The authors need to add a limitation section which should include: comparability of interventions – the TBL / LBL combined group received more instructional input; the LBL wasn’t really a lecture and the literature quoted may not be relevant; the content provided to the different instructional groups was different and may have advantaged one group; the authors don’t know what the LBL group thought of their teaching so no comparisons can be made on student perspectives.

Conclusion

This is not aligned with the methods or results - all that can be said is the group called LBL (who received an expert demonstration of neuro history and examination) performed better in the practical skills test than the groups that didn't receive this, and that two interventions were better than one.

Minor Essential Revisions
12. Table 2 – state the p value for non-significant findings rather than p>0.05.

**Level of interest:** An article of limited interest

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

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'