Reviewer’s report

Title: Effectiveness of flipped classroom combined with team-, case-, lecture- and evidence based learning on ophthalmology teaching for eight-year program students

Version: 0 Date: 09 Jul 2019

Reviewer: Daniel Tolks

Reviewer's report:

The paper lacks of literature. Furthermore all of the graphs at the end are hardly readable due to a poor quality/resolution. Please provide more accurate graphics. In this current state the paper cannot be published. I will be gladly conducting another review, if all the graphics are correct.

Even without knowing the results of the graphics several aspects in this paper should be carefully revised.

Background

The background features a lot of aspects without literature references. Please rework the whole section. The FC should be more described in detail. The reader does not get enough information about the core aspects of the method (e. g. the interrelation of factual and transitional knowledge). Please also provide some definition of the concept citing Lage et al. 2000.

Methods

A good variety of methods, however it seems that the whole study design should be revised. What is the research question? To prove that the FC in addition with case-based and team based learning is more effective than the traditional lectures? Or is the research question more about the aspect, that the FC + case- and team based learning activities is more effective in terms of the learning outcome? The authors describe the flaws of the FC at the end of page 5. Should the research question not be to analyze the better performance of FC + TBL and CBL in comparison to the Fc without the added methods?

The online phase should be described in more detail and more precise. What content did the students get prior to the face-to-face phase?
Results
The results are flawed due to three aspects

1. The FC-TCLEBL is compared to traditional lectures. It is not possible to separate the effects of the FC and the effects of the TBL and CBL in the study. Which aspect had the most impact on the students? The FC, the CBL or the TBL approach?

2. At the end of the FC-TCLEBL the teacher briefly recapped the content in class (which did not happen in the control group). Maybe the students learned everything from the additional summary of the teacher?

3. In the group of the FC-TCLEBL the students had higher rankings in team work ability scores. This is not a miracle due to the fact, that the students in the control had no team work activities

Discussion
In the discussion the term case-based learning pops out and is described in detail. This aspect should be moved to the background section.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Unable to assess

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

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