Reviewer's report

Title: Using Peer Review to Distribute Group Work Marks Equitably Between Medical Students

Version: 0 Date: 04 Apr 2017

Reviewer: Rosemarie Hatala

Reviewer's report:

Thank you for the opportunity to review your manuscript describing the incorporation of peer review marks into a group assignment mark. The new approach is clearly described in prose, in addition to the statistical formulae, which should facilitate the general reader's understanding of your approach. While I will outline a few areas below where additional information would be helpful, my major issue with this paper lies in the generalizability and utility of the approach. I take away a message that using the new approach leads to similar student rankings and essentially unchanged average scores per group, but a broader distribution of scores. This achieves the intended effect of improving the perceived credibility of the marks (i.e. high contributors having much higher marks than low contributors). However, these results are very likely driven by the atypical group sizes. As you point out in the discussion, the group sizes are extremely large. Not only would this have the effect of minimizing any biases/skew by one individual peer assessment, but I also question how meaningful the peer score is in such a group. I find it implausible that the students are able to know and assess the contributions of more than one or two other students, especially as you outline that the groups tend to subdivide into smaller teams with specific tasks. Thus it is not surprising that your statistical approach led to increased distribution of scores without any negative consequences. But as undergraduate group work typically takes place in groups of 6-8 (as you point out in the discussion), there would be both a) increased impact of an individual peer assessment and b) likely increased impact of any systematic biases within a group. Thus, I believe it is important that your paper not overstate the significance of your approach, as it may be very specific to your particular group size issue. The discussion should earlier and with more emphasis outline how your approach is likely not generalizable to the typical undergraduate group work situation, the potential harm of using your
approach in this situation (not just the benefit), and how future research may address this concern.

Additional issues/details to provide in a revision:

1. Abstract--please include more specific details in the abstract. What years were the study, how many students participating, what size classes etc?

2. Methods:
   a) Include class sizes, years, N's that are going into your statistical formulae.
   b) Add a sentence describing your curriculum (is it 4 years or 6?).
   c) For survey of students: Include the survey items as an Appendix. Do you have any validity evidence to support the survey tool? Please justify how students who never experienced the previous marking scheme could compare it to the current.
   d) The peer rating scale is not behaviourally anchored. Do you provide any training to the students of what types of contribution would be associated with each rating? If not, why not? Wouldn't this have the effect of potentially increasing the distribution of scores?

3. Results: Please provide the distribution and range of peer ratings (i.e., do they use the whole Likert scale, or do ratings cluster around the mean?)

4. Table: Consider deleting the negative description of your students (kiasuism). In any system, it would be important to describe what group participation entailed.

5. Figure 2: Please use capitals to denote each group, as you have done in the other Figures.

5. Discussion: Please remove the supervisor impressions described on the top of page 14. These are biased and unsystematic and were not part of your study methods.

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

No
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.
Yes

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.
I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:
Acceptable

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