Reviewer's report

Title: Learning Styles of Medical Students, General Surgery Residents, and General Surgeons: Implications for Surgical Education

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Reviewer: Debra Nestel

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Learning styles of medical students, general surgery residents, and general surgeons: Implications for surgical education

I enjoyed reading this paper addressing an important conceptual issue in medical (and surgical) education.

The paper has many strengths including its’ simplicity and restrained statements of implications.

I would encourage the authors to consider the following points prior to resubmission:

1. The literature in which the work is located is quite thin. Although the authors did not uncover some directly relevant papers (learning styles and surgeons) there are others that may provide insight. I would encourage the authors to include papers on any health professional group and learning styles, especially as there is a move to interprofessional education (even within surgery as the authors allude to). I have recently conducted a literature search of standard databases and found several studies impinging on the broad topic.

2. Include some reference to prominent surgical educators predictions of the future of surgical education. In particular, Reznick, Aggarwal, Kneebone who have all written important essays considering trends in surgical education.

3. A major shift in surgical education is likely to be towards the reliance on simulation-based education. I think it would be excellent for the authors to reflect on learning styles that suit different learning styles, especially simulation. Only brief reference is made to this.

4. I am left with the impression that there is an unstated assumption - teachers with a dominant learning style will rely on that style in their teaching. This needs clarity.

5. Present a stronger argument for why Kolb was adopted and not any of the other learning styles inventories/questionnaires. I appreciated the succinct outline but also think your choice needs to be justified. I would not expect much information because you need to focus on your paper but I am seeking acknowledgment of the many options you had and the rationale for your choice.

6. It would be helpful to include some critique of Kolb.
7. A statement about stability of learning styles over time.

8. A statement of the relationship between experiential learning and the 'apprenticeship model'.

9. It would be helpful to reference the general statement on page 4, “In the world of teaching and business…”

10. Propose that a box be made to set out learning styles and educational methods and make the examples relevant to surgery, possibly three columns, one with general educational methods and the third applied to surgical education. This means that the authors are demonstrating application of principles rather than making the reader do it. (Would replace paragraph on page 4).

11. Appreciated the authors’ honesty about the non-responders from the applicants. Disappointing but a helpful future area of study.

12. Page 9 should read ‘trial and error’.

13. Check some other phrasing again.

14. It is important to include a section on limitations of the study. Perhaps here you could make reference to the response rates, especially that of faculty.

Requested areas for review.

1. Is the question posed by the authors well defined? This could be clearer and better defined but satisfactory.

2. Are the methods appropriate and well described? The methods are appropriate and well described.

3. Are the data sound? Yes, they appear to be so.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes.

5. Are the discussion and conclusions well balanced and adequately supported by the data? Yes although I think there could be a final series of concluding statements and better framing of the work in the literature.

6. Are limitations of the work clearly stated? No, this is an important area to improve.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? No, I don’t think this is relevant.

8. Do the title and abstract accurately convey what has been found? Yes.

9. Is the writing acceptable? I think it needs improvement in some areas.

Level of interest: An article whose findings are important to those with closely related research interests

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.