Author’s response to reviews

Title: Medical Education Today: All That Glitters Is Not Gold

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Medical Education Today: All That Glitters Is Not Gold - Louis Maximilian Buja, MD BMC Medical Education – Author’s Responses

Editor Comments:

The author argues that the position of the basic sciences has been diminished in the new integrated curriculum in undergraduate medical education and that at risk is that future physicians will be deficient in clinical expertise that is rooted in the biomedical sciences. The perspective is an interesting one and is worthy of debate. Expanding to include other biomedical sciences, beyond pathology, will strengthen the argument.

In the Declarations section, specify the local funds received.

BMC Medical Education operates a policy of open peer review, which means that you will be able to see the names of the reviewers who provided the reports via the online peer review system. We encourage you to also view the reports there, via the action links on the left-hand side of the page, to see the names of the reviewers.
Author’s Response:

I am pleased with the favorable response to my manuscript. I appreciate the open peer review policy of BMC Medical Education. I am grateful for the thoughtful and constructive comments of the Editor and the two Reviewers, and I have taken them into consideration in making revisions to the manuscript.

The Editor has stated succinctly the overarching points I make in the manuscript, namely “that the position of the basic sciences has been diminished in the new integrated curriculum in undergraduate medical education and that at risk is that future physicians will be deficient in clinical expertise that is rooted in the biomedical sciences.”

I appreciate the Editor’s judgement that “the perspective is an interesting one and is worthy of debate.” I also appreciate and agree with the Editor’s comment that “expanding to include other biomedical sciences, beyond pathology, will strengthen the argument.”

I readily acknowledge that the perspective I present in the manuscript is strongly influenced by my professional activities as a pathologist (see section B10, page 10, line 33 – page 12, line 7), but also my activities as a physician-scientist (see section B11, page 10, lines 8-19). I selected the BMC Medical Education journal, and specifically, the Debate Section, because I want to stimulate and I welcome a broad debate on the issues I have raised. Even though this is a single author perspective, I have striven to include broad perspectives of medical educators from other disciplines, including basic science educators and clinician educators. See section B8 - Impact on Medical Educators, page 9, line 30 – page 10, line8. I also have addressed the issues from the perspective of physician-scientists from multiple backgrounds. See section B11- Impact on Physician-Scientists, page 10, lines 8-19.

E4. Funding

Local funds only - from the author’s discretionary account including payments he receives from Elsevier for serving as the editor-in-chief of Cardiovascular Pathology, the official journal of the Society for Cardiovascular Pathology.
Reviewer reports:

Lawrence K Loo, MD (Reviewer 1): I found this "Debate" perspective valuable and thought provoking, whether one agrees or not with the general view proposed by the author and the supporting arguments. Many medical schools are considering or undergoing major revisions of the curriculum and the author warns about "unintended and potentially detrimental long-term" consequences from shifting from a two-pillar systems (basic sciences and clinical sciences) to adding a third pillar ("Health Systems Science").

Author’s Response:

Thank you, Dr. Loo, for your recognition of the intended purpose of my article both to express a point of view but also to stimulate further discussion on major trends in medical education. Your thoughtful comments have led me to make some significant revisions in the manuscript. In particular, I recognize that I previously had not given sufficient attention to the characteristics of today’s students. I found the work of Jean Twenge particularly insightful and helpful. I now have added a new section to address this aspect - B3. Characteristics of Today’s Medical Students, page 5, line 21 – page 6, line 11.

Reviewer:


Author’s Response:

I agree. I have added brief text and cited these references – see page 8, lines 32-37:
“Educators also have articulated similar recommendations regarding making the USMLE results reporting as pass/fail (75, 76). But concern has also been voiced that pass/fail can be a disincentive to motivation for broad knowledge acquisition. Also, the development of an alternate, more holistic standardized metric by which to compare students’ applications for residency positions has been proposed but is currently not operative (74).”

Reviewer:

On page 8, line 7: I believe the statement "Also, movement to partial or complete grade-free system has not proven to reduce stress and burnout" is not correct and should be amended. See author's citation #54 and Wasson LT, Cusmano A, Meli L, Louh I, Falzon L, Hampsey M, Young G, Shaffer J, Davidson KW. Association Between Learning Environment Interventions and Medical Student Well-being: A Systematic Review. JAMA. 2016 Dec 6;316 (21):2237-2252.

“Author’s Response:

I understand that many medical educators are supportive of partial or complete grade-free systems (pass/fail) based on perceived salutary effects on students’ wellbeing (see references 68-74, now including the Wasson et al reference). However, I think there are downsides to this approach which I have stated in the manuscript.

Nevertheless, I have deleted the following sentences implying a direct link between pass/fail systems and burnout:

“All, movement to partial or complete grade-free systems has not proven to reduce stress and burnout. Indeed, burnout is alarmingly high among medical students and residents (59, 60). An argument can be made that undue emphasis on a single high stakes summative evaluation simply compounds the problem for medical students. “

Reviewer:

On page 8, line 18. I think the argument for meritocracy could be expanded on and the supporting citation (#64) is a relatively weak one. Meritocracy and its contribution to perfectionism may be an underlying reason for the rise in anxiety, stress and burnout seen so

Author’s Response:

Thank you for these thoughtful comments and references. I recognize that I previously had not given sufficient attention to the characteristics of today’s students. I now have added a new section to address this aspect - B3. Characteristics of Today’s Medical Students, see page 5, line 21 – page 6, line 11. In this section I discuss burnout and perfectionism. I acknowledge that a merit-based climate can devolve into excess competition and foster unhealthy outcomes. However, I think that a merit-based climate can be maintained under control and is a more realistic scenario in relationship to the environment students will experience in their post-graduate training and years in practice, see page 9, lines 19-28.

Reviewer:

Author’s Response:

Thank you for these thoughtful comments and references. I recognize that I previously had not given sufficient attention to the characteristics of today’s students. I found the work of Jean Twenge to be particularly insightful and helpful. I now have added a new section to address this aspect - B3. Characteristics of Today’s Medical Students, see page 5, line 21 – page 6, line 11.

Reviewer:

In Section B8: Impact on Pathology, page 10, line 12 -19. "Boot camps" for incoming resident trainees are not unique to pathology programs but occur across a broad spectrum of residency programs including neurosurgery, pediatrics, family medicine, medicine, general surgery, otolaryngology, etc. Might the author's viewpoint that the current changes in the preclinical curriculum and unintended consequences be strengthened by being more inclusive?

Author’s Response:

I addressed above my approach to being more inclusive. With regard to boot camps, I have added additional references and text to recognize boot camps in other disciplines. See page 11, line 37 – page 12, line 7.

Reviewer:

In Section B10: Complexities and Proposed Solutions, page 11. Could the author expand or propose additional solutions for his first barrier to curricular reform: "Curriculum revision must take place within a certain time frame, making it a zero-sum game." Other than "restoration of subject-based course, including a pathology course," are there other suggestions how a blended learning approach (reference #99) or an integrated curriculum (reference #22) can incorporate the third pillar ("Health Systems Science") in today's modern curriculum? As a member of our school of medicine's curriculum committee, I am constantly challenged in trying how best to balance the zero-sum game.
Author’s Response

I resonate with your comment: “As a member of our school of medicine's curriculum committee, I am constantly challenged in trying how best to balance the zero-sum game.” There are no easy answers. Nevertheless, I have added a bit more discussion here, see page 13, lines 5-15 and 25-32. One of my main points is that the zeal of curriculum reformers to change the format and added new content is squeezing out the time and attention that should be devoted to teaching and learning core basic science.

Reviewer:

A major strength of this article is the extensive bibliography that can be a valuable resource for those interested in reading more on the viewpoint and supporting arguments of the author, whether one agrees or disagrees with the position taken.

Author’s Response

Thank you for the comment. I worked hard to do a comprehensive literature search and to provide documentation of different points of view while expressing my own.

Reviewer:

As a minor point, the bibliography has an inconsistent format and some of the citations are incomplete or have redundant information. For example, references in need of update include: #20 (missing the volume); #33 (missing page numbers); #44 (page 18, line 11-12, the phrase "Competency-Based, Time-Variable Education in the Health Professions" is inserted between the volume and pages); #59 (should read "European Psychiatry" since there's also another journal "European Psychologist"); #64 (missing volume and pages); #97 (missing volume); and #106 (add URL and date accessed). Finally, on page 30, between references #66 and #67 (line 12), a partial journal citation is provided but not used in the main text of the manuscript and should be removed.
Author’s Response

The references have been reviewed and corrected for journal style and accuracy.

Win May (Reviewer 2): This is an interesting article and offers a different perspective to what is more commonly accepted in medical education literature.

The Background and the Discussion are well-researched and written.

The author puts forward a compelling argument to support his premise, which is that biomedical sciences need to be shored up in the new integrated curricula. I do agree that the biomedical sciences should be the foundation for clinical medicine but do not totally agree with his premise that "the new curriculum is at risk of producing graduates deficient in the characteristics that have set physicians apart from other healthcare professionals, namely superior clinical expertise based on a deep grounding in biomedical science and understanding of the pathobiology of disease."

In this article, he focuses only on Pathology and its importance in undergraduate medical education rather than on all the biomedical sciences. To make the article more balanced, I would recommend that the author include other biomedical scientists, such as physiologists, anatomists, etc. to voice their opinions as well, so that the argument becomes broader. This may be more difficult but not impossible as the author is at a medical school, where all those faculty members are present.

Or it could be made even broader, if the author includes the viewpoints of clinicians and presents the article as a debate.
Author’s Response

Thank you, Dr. May, for your positive response to my manuscript and your constructive comments. I readily acknowledge that the perspective I present in the manuscript is strongly influenced by my professional activities as a pathologist (see section B10, page 10, line 33 – page 12, line 7), but also my activities as a physician-scientist (see section B11, page 10, lines 8-19). I selected the BMC Medical Education journal, and specifically, the Debate Section, because I want to stimulate and I welcome a broad debate on the issues I have raised. Even though this is a single author perspective, I have striven to include broad perspectives of medical educators from other disciplines, including basic science educators and clinician educators. See section B8 - Impact on Medical Educators, page 9, line 30 – page 10, line8. I also have addressed the issues from the perspective of physician-scientists from multiple backgrounds. See section B11- Impact on Physician-Scientists, page 10, lines 8-19.