Author’s response to reviews

Title: Engaging students and faculty: Implications of self-determination theory for teachers and leaders in academic medicine

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To the Editor:

My co-authors and I are grateful for the opportunity to submit our revised paper, MS 1581952878902101, now entitled, “Engaging students and faculty: Implications of self-determination theory for teachers and leaders in academic medicine,” for reconsideration for publication in BMC Medical Education as a Debate. We appreciate the praise offered by all five reviewers regarding the paper’s content and relevance to the journal’s audience. At the same time, the reviewers offered substantive critiques, which we now briefly summarize in concert with descriptions of the revisions we have made in response.

Reviewer: Andrew Chaytor

“...in areas I was unsure whether further referenced material should be included... (and) the discussion was a little superficial in places. However, this does not significantly detract from the article as a whole and I do not feel strongly about the above minor points.”

We have substantially extended our reference citations and deepen the discussion in several areas, including more nuances of SDT itself (i.e., degrees of relative autonomy and internalization of extrinsic motivation, pp. 7,9), its relevance to problem-based learning (pp. 8-9, 13-14), and other approaches to motivation (pp. 4, 10), and the evidence for several of our recommendations as well as other content described in the responses to the other reviewers.

Reviewer: Janke Cohen-Schotanus

“...the examples were rather local. I miss a broader view on medical education. I wondered, when applying SDT, what the difference is between traditional lecture-based curricula and problem based programmes. Does PBL “score” higher on SDT and in which domains? Are the authors in favour of implementation of PBL?”

We appreciate the suggestion and now discuss the relevance of SDT to PBL on pp. 8-9. The first case example (pp. 13-14) describes a student course incorporating PBL; we have revised this example to be clearer about PBL’s relevance to the SDT principles discussed in our paper. As we now note on p. 9, we are not aware of published empirical investigation comparing autonomous motivation in PBL to that in other instructional methods, but the principles inherent in the PBL approach are fully consistent with SDT tenets, further supported by evidence that student interest and enjoyment is higher in PBL.

“I miss a referral to (Kusurkar et al., 2011)... I also would appreciate if the authors discuss the outcome of this paper (is motivation a dependent or an independent variable) in relation to their examples...”

We have corrected our omission and now cite Kusurkar, et al., 2011 in this regard (p. 8). Our revised text now makes clear that our recommendations are intended to improve the autonomous motivation of learners and faculty (i.e., motivation as the dependent variable), while the increased motivation in turn will increase the engagement, morale, and productivity of these constituents (i.e., motivation as the independent variable).
"What does applying SDT mean for the problems discussed in recent medical education literature?...what does this article add to what we know already?"

Revisions made on pp. 4 and 15 now make clearer how our paper differs from and adds to prior summaries of SDT. Discussion in the revised paper regarding PBL (pp. 8-9, 13-14) and feedback (p. 11), and the below-noted additional citations regarding SDT in medical education, further place our paper in the context of relevant medical education literature.

Reviewer: Gabrielle Finn
"...the title doesn’t sell the content of your manuscript. As is, people without an interest in Self-determination theory, leadership or autonomy may overlook this paper."

We appreciate this suggestion, and accordingly have revised the title of the paper to highlight “engaging students and faculty.”

Reviewer: Marcus A Henning
“(1) there is some debate around the exclusivity and duality of intrinsic versus extrinsic rewards systems and the impact this has on motivation. Is it possible to have both working together amicably in tandem?”

We have extended our discussion of the internalization of extrinsic motivation on p. 7, making it clear that there are degrees of relative autonomy, i.e., there is not a complete dichotomy between autonomous and controlled (extrinsic) motivation. One of the brief examples (p. 9) is now framed as an application of the internalization of an extrinsic motivation.

(2) throughout the article numerous claims are being made without appropriate acknowledgement or evidence. If this is the view of the authors, then this is fine and should be acknowledged as such. However, there are instances (e.g. the autonomy section) w(here acknowledgments need to be correctly referenced."

As described in our responses to Drs. Chaytor, Cohen-Schotanus, and ten Cate, we have extended our references throughout, buttressing our recommendations where possible. We also now make clearer (pp. 15-16) that our recommendations, while fully consistent with empirical evidence in teaching students, have largely not yet been directly tested with medical faculty members.

(3) there are numerous motivational theories out there that SDT could be compared to. Why just SDT?

We now make clearer on p. 4 the reasons for focusing our paper on SDT, while more explicitly acknowledging that other theories of motivation also have potential applications in medical education and academic medicine. We also now note that one of our recommendations is supported by expectancy-value theory as well as SDT (p. 10).

Reviewer: Olle ten Cate
“1. I find the description of both the theory and the examples rather superficial and somewhat interpreted. Granted, the authors admit this, but to reduce the theory to only the three psychological needs, despite their importance, does not sufficiently do justice to the theory... “Page 7. The authors talk about a ‘continuum of autonomy’... In fact it is a continuum of extrinsic motivation, which would require a bit more of a description of the theory, which I would recommend.”

We appreciate these suggestions, and have revised our introductory description of the theory (pp. 6-7) to place the three psychological needs in broader context. We also now provide greater description of the theory as related to degrees of relative autonomy and internalization of extrinsic motivation (pp. 7, 9). The greater use of reference citations to support our recommendations also
conveys more specifics about the theory and its evidence base. Regarding the examples, please cf., our response below (to the reviewer comment “Page 8 and further …”) regarding discussion of the SDT examples and cases with SDT experts.

“2. The authors claim this to be the first paper to explicitly consider its implications for leaders in academic health centers. With a little homework the authors would have noticed [5 papers listed]… Williams, who is both highly knowledgeable about SFD and faculty at the authors’ academic health center could have been consulted… the authors should build on the existing literature and attempt to bring it a step further.”

Having followed the published work that Dr. ten Cate lists with great interest and appreciation, we apologize for our oversight in not citing these papers. We now cite these papers in our revised manuscript. Together with our other revisions, we believe that our manuscript more clearly builds on prior literature and adds to it by providing more description and examples of the application of SDT at systems/administrative levels to both students and faculty; this purpose is now explicated more clearly on pp. 4 and 15. Importantly, our work also begins by helping the reader understand the need for the theory and its application by summarizing literature on the limitations of tangible incentives (pp. 4-6).

“3. I found the switch between recommendation for faculty and for students somewhat confusing and would recommend the authors to separate them in a whole section on students and one on faculty.”

We attempted to do this, but found that listing these recommendations separately would add considerably to the length of the paper due to redundancies of descriptive language. Instead, therefore, we have enhanced clarity by rearranging the examples so that student examples consistently precede faculty examples. We also have now explicitly labeled the two extended examples at the end of the paper as examples of students and faculty, respectively. We believe doing so addresses Dr. ten Cate’s comment, but would welcome further reviewer and editorial guidance on this issue.

“4. I would suggest to engage Deci and Ryan or experts from their group to discuss each of the recommendations made and whether there are indication that these really support autonomous motivation…”

“Page 8 and further. Many of the examples and guidelines are not deeply founded, or refer to literature.”

“Also, I would recommend to discuss the cases with SDT experts.”

The recommendations in our initial submission had been informed by extended discussions with Drs. Deci, Ryan, and Williams, and others in the University of Rochester SDT group over a several year period. Prompted by Dr. ten Cate’s suggestion, we reviewed our recommendations and the extended example cases with Drs. Deci and Williams, leading to several helpful modifications and fully supporting the recommendations we now make and the interpretations we offer in our examples including the cases. As noted in our response above to Dr. Henning, we now cite literature where possible and directly acknowledge that the majority of recommendations, while consistent with empirical evidence regarding SDT and with prior recommendations for educators, have not been directly tested in the manner and settings described.

“Page 6. I believe the most important humanist theoretician who wrote about relatedness was Maslow (who called this Belonging, which essentially is the same)”

We now cite Maslow when introducing the topic of relatedness on p. 7.

“Page 9 “providing means necessary to meet the proposed challenge” – I would recommend the authors to discuss with the theoreticians whether this will really foster a feeling of competence and stimulate
intrinsic motivation instead of controlled motivation (as that is what the three needs are supposed to do).”

After discussion with Dr. Deci, we have rephrased this (now on pp. 10-11) to emphasize the importance of supporting the development of the skills necessary to meet the proposed challenge, making it clearer how to support feelings of competence without undermining the sense of autonomy. We also have revised the case example on p. 14 to better illustrate this concept.

“I believe some recommendations... might lead to better acceptance of necessary measure, but this m(a)y not necessarily translate to increased intrinsic motivation (or autonomous motivation). Page 11 for example suggests that acknowledging feelings leads to feelings of relatedness. The relatedness concept refers to a group, (not to) an individual. In medical education, the most significant groupings in this respect are the student peer group and the community of practice (ie. the medical community). Being taken seriously and rewarded by significant groups leads to a feeling of belonging (relatedness) and may be expected to foster intrinsic motivation.”

We fully recognize the importance of feeling connected to the groups that Dr. ten Cate mentions, as is mentioned in a sub-item under the “Supporting Relatedness” heading (pp. 12-13) and further brought out in our first case example (pp. 13-14). However, we respectfully disagree that the construct of relatedness in SDT cannot apply to an individual. Our understanding of this point is supported by re-review of key SDT summary publications and also by discussion of the theory and our examples and cases with Drs. Deci and Williams, who agreed with the recommendations and interpretations provided in our paper including those involving relatedness with individuals.

“Page 14. I wondered about the heading “SUMMARY”. There is an abstract, so no need for a summary, but the text is not really a summary, but adds new thoughts.”

We agree and have reframed this last section (now pp. 15-16) as conclusions, following the journal’s format.

Again, we thank all the reviewers for their comments and suggestions. We believe the resulting paper is greatly improved, and look forward to any further feedback you and the reviewers may provide. Thank you very much for your consideration.

Sincerely yours,

Jeffrey M. Lyness, MD