Reviewer's report

Title: Explaining variance in self-directed learning readiness of first year students in health professional programs

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Reviewer: Adam Sawatsky

Reviewer's report:

Title: The authors use the word "Predicting" in the title. This is a cross-sectional study, and can determine associations between SDLRS and other variables, but cannot make determinations regarding prediction, which implies causality. It would probably be better to use the term "Associations" or "Correlations" instead.

Abstract: The abstract appropriately reflects the content of the manuscript.

Overall: This is a well-conducted study looking at associations between self-directed learning readiness (SDLR) and personality traits and demographics across a diverse population of health professions education students. The biggest issues are outlined in the discussion section, but are related to 1) the use of the words "predictive model"; 2) the interpretation of the relationship between SDLR and personality; and 3) the clarification of the relationship between age, previous achievement, and SDLR.

Introduction:

1) On page 3, lines 5-10, the authors make the claim that "pre-certification students' readiness for SDL must be understood if teachers and curricula are to meaningfully and effectively prepare them for SDL in a professional and practice context." The word MUST seems to be very strong, and if this is more than the authors' opinion, than it should have evidence to back up this statement.

2) On page 3, line 31, the authors state that "the research literature provides indicative rather than definitive answers." First, it is not clear what the authors mean by the words "indicative" and "definitive." Second, it is not clear what would constitute "definitive" answers, as this is difficult to demonstrate, and I am not sure that this study provides any more "definitive" answers than previous studies. The authors should focus on the weight
of evidence from the previous literature, and the gaps in that literature that this study aims to fill.

3) Paragraphs 3-6 of the introduction provide a nice overview of the factors that have been studied with the SDRLS, and the limitations of these studies (particularly the lack of multidisciplinary cohorts). My opinion would be that these paragraphs could be condensed to be more concise.

4) On page 5, lines 14-24, the authors make the claim that SDL may be a stable trait, and that previous research has not explored correlations between SDLRS and other traits. What is the connection between the discussion regarding whether or notSDLR is a trait, and associations between other personality traits? In short, is the goal of this study to tease out the question about whether or not SDLR is a trait versus an attitude or skill that can be taught or shaped over time?

5) The final paragraph of the introduction should be written in past tense (i.e. This study examined factors…)

6) In lines 44-46, the authors discussed developing a "predictive model." It should be made clear that a predictive model requires prospective validation.

Methods:

1) Great description of the setting, participants, instruments, data collection and data analysis.

Results:

1) Please include the response rate for the survey in the first sentence of the results.

2) It is unclear to me to what the "post-hoc Bonferonni test" on page 9, line 41 and page 10, line 2, refers, as it was not mentioned or explained in the statistical analysis in the
methods. Usually a Bonferonni test is to correct for multiple comparisons, but this seems like a different application, and needs to be explained more clearly.

3) Page 9, line 49, I believe the word should be "completed" not "competed."

Discussion:

1) My first concern is the use of the words "predictive model." This is a cross-sectional study, and they have looked at several associations between demographics, personality, and SDLR. If anything, they have created a model that describes factors associated with SDLR, but they have not predicted anything. And what is the purpose of finding things that predict a score on the SDLRS…there are studies that are trying to see if the SDLRS predicts SDL behavior or academic achievement, which seems to make more sense. I think that the authors should stick with describing the associations and should not call this a "predictive model." I see no attempt by the authors to actually create a true model that could then be used in a prospective fashion to "predict" something—in this case scores on the SDLRS.

2) My second concern is in regards to the author's handling of the relationship between personality traits and SDL. First, there were associations between SDLR and all of the "big 5," although different strengths of association. What does this tell us about the nature of SDLR and personality? The paragraph on page 12, lines 24ff do not address this. It seems important, as the authors spend time in the introduction pointing the reader to the fact that this is a gap in the literature.

3) My third concern is that the authors outline the limitations of relationships between the SDLRS and age and previous academic achievement, particularly trying to tease out if these are independent, or related. The data suggested that previous achievement was correlated with higher SDLR with controlling for age, while there was no difference with age alone. This should be highlighted in the discussion more clearly, as it seems to help clarify previous literature.
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?
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Yes

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