Reviewer's report

Title: Increasing Educational Attainment and Mortality Reduction: A Systematic Review and Taxonomy

Version: 1 Date: 14 Apr 2017

Reviewer: Frederick Zimmerman

Reviewer's report:

The authors have made a herculean effort in identifying and skeletally describing an enormous literature. Unfortunately, there is not enough flesh on the bones of this work. The main problem is that the contribution of this work is never made clear. Why do we need a taxonomy of the literature on education and health, especially one with so few categories? The final two sentences of the discussion section (lines 335-339) seem to make the claim for the contribution of the paper as a whole: to identify gaps in the current evidence and to inform future research. Examine these claims one by one. If this framework really helps to identify gaps in the literature, the authors should be able to tell us what those gaps are. And as for informing the design of future research, it really isn't credible that these four categories will inform the design of future research in any meaningful way.

There are problems as well throughout the manuscript. For example, line 209 notes that studies of sub-groups often have non-significant results. However, the specific sub-groups are not mentioned, and moreover there is no way to tell whether the lack of statistical significance is because the sub-group sample size is too small or that there is no true effect in the sub-group. What's more, the concept of a sub-group is not well conceptualized. If one of the studies included all rural Iowans, for example, then presumably that would not have been counted as its own sub-group. But it does seem like a sub-group. Here's an even more telling example: the fact that there are studies of the changing effect of education on mortality over time should have alerted the authors to the fact that it might not make much sense to lump in studies from the 1950s with those 60 years later. This is a major problem: the authors claim that their taxonomy should inform research design, but their own research design doesn't seem to acknowledge these categories!

The authors write that they have conducted a systematic literature review, but the main point of such a review is to provide insights on the collective results of a literature. Here, the actual effect of education on health is not mentioned even once. The authors seem to be ignoring the very real interests of those who produce and consume this literature. Instead the manuscript describes in very simple terms some of the least important aspects of study design.
Are the methods appropriate and well described?  
If not, please specify what is required in your comments to the authors.

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