

Responses to Reviewers

Article title: Physics and Humanity: the advancement of women in physics at universities

The ratings which were “neutral” or “weakly disagree” constitute an important part of the comments from both reviewers. The author re-examined the logical flow of the paper in the light of the ratings.

Two courses of action seemed possible: (1) comply only with the comments, which were supplied by Review 2, or (2) improve the logical flow of the paper and attend to issues of the acceptability of the paper. The second option has been taken. To do this, the following changes have been made. It is hoped that these are acceptable in terms of journal guidelines for authors and in the view of the reviewers.

1. Headings have been added.
2. Material has been moved to improve the flow of the paper under the headings. This includes some paragraphs which belong more logically in other sections.
3. The third question posed in the Introduction, “3. Why does the situation with respect to gender balance snap back towards a minority of women when initiatives come to an end?”, has been removed, as no satisfactory discussion of this question was undertaken.
4. The gender equality paradox has been included, and necessitated some additional remarks on the Global Survey of Physicists which have now been included. As a direct result of consulting Stoet and Geary, an additional paragraph summarising the discussion of choices has also been included under the section on “Useful concepts for physicists”. Sections on regional and economic conditions have been amplified.
5. Some conclusions which are not well supported have been removed, and the conclusions follow the logical flow.
6. During the interval between submission and review, the proceedings of the Int. Conf. on Women in Physics, 2017, have been published. In view of the concerns expressed by the reviewers through their review ratings, the opportunity has been taken to include some relevant citations, without departing too far from the paper delivered at ICPE, or from the submission. If this is unacceptable in terms of resubmission the author is happy to remove this material.
7. The opportunity has been taken to clarify meaning and to tidy grammar and punctuation.

Review 2 provides comments which have been addressed as below.

		Response
comment 1	Review 2 The article proceeds from the argument that "the physics community of practice has been active...in promoting advancement of women, (but that) the percentages of women in university departments remain generally lower in physics than in the life sciences." The reasons for why this may be the case are then explored. It also summarises recent changes and useful concepts.	
comment 2	Review 2	The gender equality paradox has been included, and necessitated some

	<p>It is possible that the article could deepen its narrative and widen its gaze by referring to examples in the literature of a so-called "gender equality paradox,"</p> <p>e.g. the Nordic example where greater welfare support has actually been shown to have resulted in fewer women STEM graduates in Norway, Finland and Sweden, than in countries such as Algeria and Albania, where economic imperatives may have been a factor in the production of greater women STEM graduates.</p>	<p>additional remarks on the Global Survey of Physicists which have now been included.</p> <p>As a direct result of consulting Stoet and Geary, an additional paragraph summarising the discussion of choices has also been included under the section on "Useful concepts for physicists".</p> <p>Sections on regional and economic conditions have been amplified.</p>
comment 3	<p>Review 2</p> <p>It may also be beneficial if similar studies could look at the reasons for the apparent greater numbers of women undergraduates in chemistry than in mathematics and physics, as appears to be the case at UoTs.</p>	<p>The author values this comment, but unfortunately cannot undertake to extend the present paper to chemistry and mathematics in the time available.</p> <p>The paper has a global view rather than a South African view, and there is therefore a dilemma on whether to seek specific data on universities of technology. The sources cited, including both surveys, apply to all universities.</p> <p>It is hoped that data from the Gender Gap survey will shed light on chemistry as well, and it is clear in the section on this survey that chemistry will be included.</p>
B5	<p>Review 1</p> <p>Does the article draw new and/or important - or at least, interesting - conclusions?: Neutral</p> <hr/> <p>Review 2</p> <p>Does the article draw new and/or important - or at least, interesting - conclusions?: Weakly Disagree</p>	<p>The suggestion of review 2 has prompted a comparison of gaps in access to resources and opportunities, which is described.</p>
B6	<p>Review 1</p> <p>Do the conclusions drawn follow logically from the preceding arguments presented in the article?: Neutral</p> <hr/> <p>Review 2</p> <p>Do the conclusions drawn follow logically from the preceding arguments presented in the article?: Weakly Disagree</p>	<p>The conclusions have been revised so that the links to the content on Useful concepts, Physics and Life Sciences, and the Global Survey of Physicists have been clarified.</p> <p>The section on evidence from the Global Survey of Physicists has been expanded and provided with better references.</p> <p>The conclusions have been revised, and some conclusions which are not well supported have been removed.</p>

B7	<p>Review 1 Is adequate evidence presented to support the claim(s) made in the article?: Neutral</p>	<p>The section on evidence from the Global Survey of Physicists has been expanded and provided with better references.</p>
	<p>Review 2 Is adequate evidence presented to support the claim(s) made in the article?: Weakly Disagree</p>	<p>The conclusions have been revised, and some conclusions which are not well supported have been removed.</p>