

Review of: "What do different perspectives on epistemology tell us about teaching and learning?"

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Potential competing interests: No potential competing interests to declare.

General

The manuscript addresses a relevant topic for science teaching and learning, and teacher education. However, the manuscript does not constitute a complete scientific paper. First, the author does not begin defining the educational problem (even when problem-solving is one of the central topics in the text), the reasons to address it, and the methodology or process to develop the systematic reflection on the problem. It draws attention that the abstract does announce a problem in science education, as well as its implications and importance. Second, it is not clear why the author selected some epistemological positions to discuss and the criteria to analyse, critique or reflect on the positions selected. Third, the results are not uniform in their display. This situation makes it difficult to read and carry the common thread. Fourth, the discussion is not clear at all. There are some arguments on teaching and learning and teacher education, which strengthen the manuscript. However, it is not clear the author's contribution to the research field. Fifth, the text does not count on titles and subtitles, which makes it difficult to read and find coherence. Seventh, the references are very old.

Title

It is clear.

Abstract

It states a concern and the need for reflecting or discussing the concern. More about results and or conclusions would complement the abstract. For instance, the author can mention the main epistemological models, trends or positions that are analysed in the article. Likewise, the author could tell the central abstractions or patterns regarding epistemology-teaching as conclusions.

Development

There is not a problem, concern, motivation or reason stated. This lack of a problem reduces the reader's comprehension, and the text's coherence and contribution. Likewise, the author does not offer reasons to develop this manuscript. In addition, the author does not describe how or why she will select the epistemological positions to analyse. Moreover, the author does not explain how she will analyse, reflect on, or criticise the epistemological positions selected. Consequently, it is uncertain the manuscript's coherence, rigour and contribution.

Paragraphs 1, 2, 3, 4, 5, 6 and 9 seem to be the results of the analysis. The author cites some authors who have addressed the idea of knowledge and knowing. In some cases, the author addresses briefly the educational implications of a specific epistemological position. Consequently, as the author does not analyse the entire corpus in the same way, it is not clear the contribution of some paragraphs (citations) and the general contribution of the results.

Paragraphs 7, 8 and 13 seem to be the discussion. In paragraph 7, the author mentions the difficulty of having a universal idea of knowledge. Then, without an explicit reason, she mentions some activities that teachers should enact to engage students in knowledge production instead of repeating it. On the other hand, paragraph 8 contributes more clearly because the author reflects on teachers' and students' epistemologies and the implications for teaching and learning. Finally, Paragraph 13 is confusing. The author states some questions about problem-solving and personal epistemologies, continues telling Duschl's ideas on teaching and learning, and finishes discussing epistemologies and teacher education. However, the ideas are not clearly connected.

Paragraphs 10, 11 and 12 display Tuminaro's and Redish's proposal regarding epistemic games. However, it is not clear the reason to mention this framework in this part of the manuscript.

Finally, the author proposes in paragraph 14 some questions for a future discussion.

Recommendations

1. To write an introduction presenting the educational problem that represents the different epistemological positions and the personal epistemologies in science education. Moreover, develop the rationale for addressing this problem. Tell us what science education, teachers, students, teacher educators, policymakers and society could gain by addressing this problem. Furthermore, explain what the criteria to select the epistemological models or positions to analyse are and how will you analyse every position.
2. To unify the results structure. For example: authors' epistemological position + educational implications + limitations.
3. To define more the two discussion topics –teaching and learning, and teacher education.
4. To enrich the discussion by citing authors who have addressed the same problem, identifying convergences and divergences.
5. To present some conclusions, in addition to the questions already suggested for the scientific debate.
6. To use explicit subtitles to differentiate the sections and subsections.
7. To significantly expand and update references. The newest is from 2014.

Thanks so much for this invitation.