

For research article

Response to Reviewer 1 Comments

1. Summary

Thank you very much for taking the time to review this manuscript and giving us some valuable suggestions. Please find the detailed responses below and the corresponding revisions highlighted in the re-submitted files.

2. Questions for General Evaluation

Reviewer's Evaluation

	Yes	Can be improved	Must be improved	Not applicable
Is the content succinctly described and contextualized with respect to previous and present theoretical background and empirical research (if applicable) on the topic?	()	(x)	()	()
Are all the cited references relevant to the research?	()	(x)	()	()
Are the research design, questions, hypotheses and methods clearly stated?	()	()	(x)	()
Are the arguments and discussion of findings coherent, balanced and compelling?	()	()	(x)	()
For empirical research, are the results clearly presented?	()	()	(x)	()
Is the article adequately referenced?	()	(x)	()	()
Are the conclusions thoroughly supported by the results presented in the article or referenced in secondary literature?	()	()	(x)	()

3. Point-by-point response to Comments and Suggestions for Authors

Comments 1: First, the literature review may be strengthened by the addition of more current literature, with a particular focus on empirical evidence to support claims regarding inquiry-based learning and the use of storytelling as a pedagogical tool in the science classroom. There is a large and growing body of evidence to support your claims.

Response 1: Thank you for your suggestions, we agree with them. We modified the section 2.4 about the inquiry-based learning (lines 192-205), with two new references ([29], [30]) and we added some references about the use of storytelling as a pedagogical tool in the Introduction of our paper (line 42; ref. from [10] to [14]).

Comments 2: In addition, the foregrounding of what will be presented (for example, lines 187-194) might be revised to create clearer transitions. Although it is customary in academic writing to tell the reader what you will present, your argument would be much stronger if supported by a more nuanced transition from one section to the next. You may consider revising these transitions to build a stronger argument.

Response 2: Thank you for the suggestion. We have modified the transition points between sections (lines 67-76 and 208-215) so that the transition from one section to another is more nuanced. In particular, in the new version we have attempted to make explicit how the elements that are discussed in the section fall within the entire paper.

Comments 3: You might consider restructuring/reordering your methods section. The story elements and design principles may be clearer if they follow section 3.2 (discussion of the Teaching and Learning Cycle. 5E model).

Response 3: We thought about the possibility you mentioned while structuring the Section 3 (“Methods”), but we have consciously chosen to first present the story and secondly to explain the connection between the phases of our TLS and the 5E’s cycle, characteristic of inquiry-based activities. The design of the TLS (section 3.2) is closely related to the specific story we considered (section 3.1). Indeed, phases (e.g., see lines 267-270, 286-288) and tasks (e.g., see lines 255-258, 271-276, 296-300, 308-310) are related to the story considered. We believe that the design principles related to the 5E’s cycle are clearer with explicit reference to some elements of the story and we can’t be so explicit if we invert the order of the sections.

Comments 4: Please explain why the use of digital tools is significant (lines 297 & 298).

Response 4: In Section 3.3. the students’ affiliation with digital classrooms and their use of iPads was emphasized to justify the fact that they produced answers and drawings using iPads. We clarified this before Figure 3 (lines 427-428) and in the captions of Figures 3, 4, and 5. In addition, we edited the sentence to lines 322-323.

Comments 5: Please describe your processes for data analysis in sufficient detail to make clearer how your preliminary findings emerged from the data.

Response 5: We extended Section 3.4 by describing in more detail how the data were analyzed (see lines 376-388 and 396-400).

Comments 6: Consider revising and resubmitting your manuscript after data analysis has been completed. This will allow you to make a stronger argument regarding your findings and strengthen your discussion.

Response 6: In this paper, our focus was on the development of the Teaching Learning Sequence (TLS) and exploring its potential effects on a classroom setting. Consequently, we have shown some preliminary findings, as reflected in the title of Section 5 and as clarified at the end of Section 1. These preliminary findings will be the starting point for our future research in this area. We truly appreciate this comment, as it reaffirms that the research path we have outlined is promising.

4. Response to Comments on the Quality of English Language

Point 1: The manuscript will be improved with careful attention to revision for clarity and editing to correct all minor grammatical errors and typos.

Response 1: We re-read the entire paper and corrected the minor typos we found.