

REVIEWER REPORTS

Reviewer Comments:

Reviewer 1

Thank you for your manuscript, I enjoyed reading it. I have left detailed comments on the attached Word doc.

Dear Reviewer, many thanks for your comments and positive feedback. We will provide a detailed response to each of your comments below. All changes in the manuscript were highlighted in red.

My main issues are:

1. The scale that was used for the quantitative data (it looks like a 1-4 scale). I don't think the same scale can be used for all your questions and this needs to be revised.

We divided the manuscript into two types of evaluation. The quantitative is based on a scoring system ranging from 0 to 20. We included a detailed description of the rubric in the Method section. For the qualitative data, we used a survey with a Yes/Few-Regular/No scale and also included open questions to answer that were not included in the first version of the manuscript. We improved the explanation of the Instruments used in the manuscript.

In the new version, we included the raw data from the scores and the surveys in ESM_2.

2. There needs to be more information about what the students were asked to do on the essay portion and how the essay was graded (including the rubric that was used).

Thanks for the suggestion. We are including the rubric in Table S1 and expanding the explanation of how the essay was evaluated in the Objective rubric in the Method section.

3. The discussion section does not discuss your data! Please include a paragraph discussing your findings for each of your 3 data figures and what you think the data are telling you.

Thanks for the advice. In the second to fourth paragraph of the Discussion, we included paragraphs discussing the data and the main result of the work.

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Reviewer Comments:

Reviewer 2

The manuscript is considered an interesting university educational proposal to address the situation caused by the pandemic, it gives an account of a process carried out with university students and allows us to glimpse an established methodology. In general terms, the manuscript has a clear and easy-to-read structure, which allows the reader to follow the ideas.

The authors make the methodological development clear and, in general terms, describe an analysis process that allows them to infer some aspects about the development of the proposal throughout the two semesters of application. However, there are some points that must be considered in terms of both format and content that will surely improve the quality of the manuscript.

Dear Reviewer, many thanks for your comments and positive feedback on improving the manuscript. Each suggestion will be addressed below. All changes in the manuscript were highlighted in red.

- 1. In the first part of the manuscript, a review of the summary should be made in terms of its structure and main idea. Furthermore, it is important to point out the importance of the use of acronyms in the development of the texts, since the keywords contain It places an acronym that has not yet been presented by the authors and we readers have no idea what CMSLTA means, but only until the theoretical framework is presented. On the other hand, it is important that the keywords used in the text be reviewed, since there are some terms that are not properly suitable to be used as keywords, especially thinking in terms of indexing the paper in the future; Words such as Sci-hub or Zotero are not terms that can be considered key-words.**

Thanks for the recommendation. We restructured the Abstract according to your suggestions. The Keywords were changed by: journal club, crop sciences, research tools, e-learning, scientific articles

2. In the introductory section, it is worth highlighting the fact that the world situation that occurred due to COVID-19 is mentioned, in addition to a brief approach to the concept of Journal club as well as its history; however, the situation for which the teaching model is proposed is not clear, that is, there is no problem statement that allows us to show what was the situation that triggered the research proposal, and on the other hand, the characteristics of the community of learning.

Thanks for the advice. We agree with your comment. It needed a connection between the pandemic situation, journal club history, and application with the research objective. We included an additional paragraph before the objectives at the end of the introduction to overcome this issue.

3. Regarding the conceptual framework, it should be noted that although some of the terms that are considered "cross-cutting" to the research proposal are defined, there is no evidence of a relationship between one and the other and their relevance or applicability in the developed process. This conceptual framework is more similar in nature to a "glossary", since it does not articulate in any way the concepts that are presented. It is recommended that there be a greater articulation of these concepts with the development of the experience that is being related in the manuscript.

Thanks for the feedback. We modified the Conceptual framework based on the present comment and the comment below.

4. Regarding the part of pedagogical skills in science education, it is necessary to consider what is the objective (in terms of the development of research) of talking about the pedagogical skills of university teachers, and not the development of skills by teachers' students, since the focus of the experience was precisely with the students and not with the professors. If so, we would have to talk about the teachers' TPACK (Technological Pedagogical Content Knowledge), and this materializes in another type of research and consequently other results. Therefore, it is recommended that if you're going to mention something about skills, it should be about the skills that students develop with the experience that is being reported.

We appreciate your feedback and we agree with your observation. To focus on the objective of the work, we have retained the terms aligned with the research. The section on Pedagogical Skills in Science Education has been removed.

5. **In the methodology, it allows us to glimpse a population and a context that until now had not been exposed in the entire manuscript, it gives an account of a clear methodology and established times for the development of the proposal. However, some issues arise regarding the validity and reliability of the instruments mentioned; firstly, on a survey and then on an objective rubric, instruments with which the progress of students in terms of their production is monitored and evaluated. In all educational research, and of a qualitative nature, it is necessary to carry out a validation process of instruments such as surveys, questionnaires, scales, etc., because the aim is to have the highest level of reliability in the research.**

Thank you for your comment. The authors agree with the observation regarding the lack of validation of the instruments used, especially concerning the survey. In response to your suggestions, we have included the rubric used for evaluating the essays (Table S1). Additionally, we have highlighted this limitation in the Discussion section of the manuscript, acknowledging the need for more rigorous validation in future studies. However, we think that the results of this research can serve as a valuable starting point for a more detailed analysis of the application of JC as a teaching-learning method.

6. **For the results section, it is worth referring to them in two parts, the first about the results presented in the frequency of words, although a process of systematization of the information collected in the applied instrument is carried out, a process of expansion of the These, that is, some aspect of these results is not expanded upon in the discussion section, which makes the reader ask, and what was the objective of doing this? Since if they are not subsequently considered as a factor in the analysis of the investigative process, I consider that there is no need for them to be presented as results.**

Following your suggestions, we have excluded the "Research Tools and Training" section from the results, where the frequency of tool usage was presented. The Figure has been added to the supplementary material (Figure S1) where it could be referenced.

7. **The second part of the results, regarding the progress in the grades of the essay, there is no clarity about how the process of evaluation and measurement of said progress was carried out, beyond the two graphs that apparently show a “progression”. However, there is no clarity as to how this type of progress could be evidenced. What aspects were considered to “measure” this progression? And if a scale was used, was it constructed by the research team? Or was it taken from someone else? Was it a methodology adapted from another research? With an essay is it possible to develop critical skills and professional empowerment? All these doubts arise from the fact that there is no clarity regarding the way in which the process was carried out and the inferences that are placed in the discussion part.**

Thank you for your observations. Regarding the first point, we have expanded the explanation of the quantitative instrument, detailing the rubric used for the evaluation and the criteria considered. The rubric has been included in the Supplementary Material (Table S1). Regarding the second point, we have added the anonymous opinion of the students on the application of JC in the results section, information that was not included in the first version. We removed the sentence “professional empowerment” and delimited based on the students opinion

8. **It is important to point out that in the discussion section some statements are made that are not supported by the development of the research, such as the development of critical skills, reading skills and analytical skills, since, as mentioned above, they do not. There is evidence in the manuscript that this has been measured in some way, either in a pre-test post-test application process or at a level prior to the Journal Club experience and after the experience. Without this, these types of statements are not supported by evidentiary facts.**

We agree with your comments. In the first version, the perception of the students was not included and it was limited to closed-ended questions. Based on the recommendations, the general opinion of the students on the application of JC was included. The evidence presented is based on the students' opinions (ESM 2) and we include a description of the results in the Student Perception section. The mentioned point will be included in the study's limitations, as well as the importance of post-test evaluations of the students to determine their performance after being part of JC.

9. Finally, it is recommended to review the English throughout the manuscript, since some problems are evident in terms of grammar and the use of technical vocabulary, as well as in the conjugation and use of some phrasal verbs.

Thanks for the suggestion. Initially, we used the Curie AI from Springer Nature (<https://beta.springernature.com/pre-submission/writing-quality>) for suggestions to improve writing quality. Subsequently, it was reviewed by a native speaker for the final revision.