



Peer-Review Report Form

Manuscript Title:	Contextualizing Earth and Space Science Curriculum through Local Environmental Issues: A Case Study of Sand Dredging and its Impacts
Type of Article:	Original Article

FIRST ROUND

Editor

<u>General Comments and Recommendations</u>
The reviewers acknowledge the significance of your manuscript and recommend several revisions to further improve its clarity, coherence, organization, and overall scholarly quality. In addition, you are advised to thoroughly review and validate all references included in the manuscript. Please ensure that all cited sources are accurate, accessible, and retrievable through Google Scholar to uphold the credibility and reliability of the study. Additionally, make sure to include the DOI or website link for every reference to facilitate verification and accessibility of sources. Furthermore, only sources that are cited within the manuscript should appear in the References section, and all entries listed in the References section must also be cited in the text. For example, if 20 unique sources are cited in the manuscript, then only those 20 sources should be included in the References section. Please note that repeated citations of the same source within the text are counted as a single reference entry; therefore, the total number of references may be lower than the total number of in-text citations.

Reviewer 1

<u>General Comments and Recommendations</u>
I acknowledge the valuable effort to contextualize Earth Science education through local environmental problems. The manuscript provides a local perspective on environmental issues related to sediment extraction in Ilocos Sur.

<u>Specific Comments and Recommendations</u>
Title: The current title includes the specific case study location and focus. Consider a concise alternative that highlights the core educational focus.
Abstract: The abstract identifies six key themes related to environmental impacts. It lacks specific details on the sample size which is mentioned later in the text. Add explicit mention of the twelve participants to strengthen the summary.
Introduction: The introduction establishes a clear rationale based on recent curriculum reforms. A major flaw is the abrupt transition between global environmental degradation and the specific Abra River context. Expand on how global practices directly mirror the local situation in Ilocos Sur. Provide a smoother narrative bridge to connect the constructivist theory with the specific localized problems.



Methodology: The authors state a qualitative case study design was utilized across selected coastal barangays. The selection criteria for the twelve participants remain vague despite the claim of purposive selection. Specify exact selection rubrics to ensure reproducibility. Clarify the thematic analysis steps explicitly rather than a simple citation of a framework.

Results: The presentation of themes relies heavily on local participant statements. For the first theme, the shoreline retreat data relies on visual satellite imagery and resident accounts. Provide quantifiable metrics to support these visual claims. For the third theme, the gasoline flavor anomaly needs scientific corroboration rather than a sole reliance on participant claims about fish taste. The tables provide excellent curriculum alignment mapped to Grade 11 competencies.

Discussion: The discussion reiterates results instead of a rigorous analysis against the provided broader literature. Elevate this section by a deeper comparison of the local results with other coastal communities mentioned in the text.

Conclusion: The conclusion functions as a simple summary of the six themes. It must articulate broader implications for educational policy reform.

References: Several references appear incomplete or improperly formatted based on standard academic expectations. Ensure strict adherence to standard publication guidelines. Verify the digital object identifier links and publication years for all external sources.

Please indicate your recommendation by checking the appropriate box below.

<u>Decision</u>	
	Accept the manuscript for publication.
/	Reconsider the manuscript after the authors have satisfactorily addressed and complied with the reviewers' comments and recommendations.
	Reject the manuscript, as it is not suitable for publication.

Reviewer 2

<u>General Comments and Recommendations</u>
The paper has a relevant local problem and also a potentially useful contribution to Earth and Space Science education. However, I have serious concern on the validity of the main claims of the paper.
<u>Specific Comments and Recommendations</u>
The paper is making causal claims that the research design cannot fully establish. The six themes are repeatedly presented as impacts caused by sand dredging, but the main evidence comes from field observations, stakeholder interviews, and secondary online reports. These can strongly document experiences, perceptions, and environmental changes occurring together with dredging, but they do not clearly separate dredging from other possible causes such as typhoons, natural river migration, seasonal sediment movement, coastal processes, or other human activities. Still, the Discussion treats the six themes directly as environmental impacts of dredging. This is a fundamental validity problem throughout the paper. At present, the evidence seems stronger for perceived and observed changes associated with dredging than for establishing that dredging caused all these changes.



The claim that the theme-based model is the most suitable curriculum integration model is not sufficiently demonstrated as a research finding. This is one of the central contributions of the paper, but the comparison appears largely based on researcher judgment. The manuscript concludes that thematic integration is particularly suitable, yet there is no clear methodological basis showing how the competing models were evaluated, how the criteria were operationalized or weighted, who made the evaluation, and whether the judgment was independently validated. The conclusion nevertheless states definitely that the theme-based model is the most suitable. Because this claim is already highlighted from the abstract until conclusion, the weakness affects a major part of the paper. As presently written, the selection looks more like an author-generated preference rather than a sufficiently established empirical result.

Please indicate your recommendation by checking the appropriate box below.

<u>Decision</u>	
	Accept the manuscript for publication.
/	Reconsider the manuscript after the authors have satisfactorily addressed and complied with the reviewers' comments and recommendations.
	Reject the manuscript, as it is not suitable for publication.

SECOND ROUND

<u>Decision</u>	<u>Editor</u>	<u>Reviewer 1</u>	<u>Reviewer 2</u>
Accept the manuscript for publication.	/	/	/
Reconsider the manuscript after the authors have satisfactorily addressed and complied with the reviewers' comments and recommendations.			
Reject the manuscript, as it is not suitable for publication.			