

Reviewer 2:

This paper presents an inspiring and much-needed intervention into the world of climate education. The project's emphasis on creativity, place-based learning, and emotional engagement is both powerful and timely—especially given the urgent need to include younger voices and coastal communities in conversations about climate change. That said, while the initiative is rich in vision and community engagement, the paper itself reads more like a project report than a tightly argued academic article. Below are some thoughts on how it might be strengthened for publication.

>> We again thank the reviewer for these very warm and supportive words concerning our paper as well as the time and consideration to how the manuscript could be improved upon.

1. The paper would benefit from more clarity around why Year 8 students (~12–13 years) were selected. Was there something about their developmental stage that made them ideal for this kind of emotional and creative engagement? Offering a short explanation here could help readers understand the pedagogical rationale more clearly.

>> We have added in a sentence to address this point on the age range selection. It was entirely serendipitous in the work built on existing relationships. This is now made clear: Line 140: *“This project evolved from an ongoing relationship between project lead researcher Katie Parsons and a Withernsea High School teacher, and co-author, Sarah Harris Smith. Ongoing work had sought to explore ways to encourage teachers to move outside of the classroom and creatively use the outdoors in everyday teaching, looking specifically at the barriers that teachers face in doing this. One of the objectives of this wider project was to engage students with their own communities and wider landscapes they lived in, with the rapidly eroding Holderness coastline, being a key focus. The project aimed to understand children and young people’s climate change knowledge and to understand the lived experiences of their community, and how, in turn, these experiences have impacted their lives. The work reported herein evolved from this framework and the recruitment of the class was through the existing relationship with the school.”*

In terms of data and analysis, the authors gathered an impressive range of materials—empathy maps, stories, community maps, and more. However, how these were analysed is a bit unclear. There’s very little mention of how themes were drawn out or if any coding frameworks were used. It might help to walk readers through the process a bit more—what was looked for, how interpretations were made, and what might have been left out. The pre- and post-questionnaires mentioned early on sound like they could offer some incredibly valuable insights, but they’re not really brought back into the paper later.

>> Additional methodological detail has been added. This was brief in order to ensure the manuscript was concise, but in taking a steer from R2, this additional contextual methodology has now been added. We have added this text to the start of the results section: *“The results of this project look chronologically at the methodology and sessions detailed above to understand the processes that the young people went through as they explored the impacts of coastal change and living in a changing climate. We explore the co-creation of their journeys and provide our observations, based on transcripts of the sessions, as well as our observations on their engagement and how the young people’s understanding grew and took different directions as the project evolved.”* And Line 380: *“A set of themes emerged from our coding of the*

observations of the sessions and analysis of the creative materials produced, that have a suite of implications for engaging at risk coastal communities.”

2. There are some lovely themes in the paper—like intergenerational learning, empathy, and localised environmental awareness—but they don’t feel fully developed or tied back to the conceptual framework. Since the paper gestures to Freire and critical pedagogy, it would be powerful to revisit those ideas when analysing the data: How did students engage in dialogue? What kind of transformation, if any, was visible? Some of the claims—for example, that students “took action” or developed empathy—are really compelling but feel a bit anecdotal. Could these be grounded more in the data? A quote here and there is useful, but a bit more structured evidence would go a long way in making those claims more convincing.

>> We thank the reviewer for this suggestion, and we now revisit Freire and critical pedagogy as part of the narrative of the results and discussion. We revisit those ideas when analysing the data including addressing how the students engaged in dialogue and detailing how the transformation and action was visible in terms of taking action and showcasing empathy. This is best captured in the extended paragraph at the start of the discussion (Line 390): *“The work through the series of workshops and engagements has effectively developed and deployed a methodology that can be best represented as a new climate praxis model, based on Freirean theory (Freire, 1970). This model builds a knowledge (gain), exploration (play) and action (Figure 7) framework, which combined connectivity to an environmental issue (coastal change) through to adaptation. The work was undertaken in partnership as educators and researchers, and we ensured that this was both age and socially/culturally-appropriate, building a ‘critical dialogue’ and recognising people’s lived experiences. This asset is central to Freire’s notion of praxis and forms an important shaping influence on the model. Reflecting on how this progressed through the methodology and the results, it is evident that this advanced through a double looping learning process and journey (Trajber et al., 2019), where a reflective approach within the cohort enabled participants to gain knowledge and understanding, explore and widen their perspectives through to beginning to act on coastal change within their broader community. In effect the work extends a climate literacy-based approach that seeks to enable students to become active participants and ensuring they are best prepared for the challenges that they face into the future with the knowledge to enable them to consider and derive potential solutions (Lawson et al, 2018; Hügel and Davies, 2020). Additionally, the interfaces between the principal components include looping and reflexivity, essentially involving each of the participants transiting their own “wave of change” (Jones et al. 2021). There is evidence in their journey as individuals and a collective of macro-level looping, where additional reflection leads to deeper knowledge, enhanced engagement and results in amplified action (Figure 7). Action in the work herein took the form of storytelling, the participants wanting to tell the narrative of their community to others and this was achieved through the production of their film.”*

3. The Climate Praxis Model introduced is one of the most promising parts of the paper. It has real potential as a framework others could build on. But right now, it’s a bit difficult to tell how the model emerged from the data itself. Was it built inductively based on what students did and said? Or was it designed in advance and then tested? Clarifying this could really help show the model’s originality and relevance. Also, a brief discussion of

how the model relates to other educational frameworks—such as place-based learning, participatory education, or climate literacy—would ground it more firmly in existing scholarship and show where it makes a new contribution.

>> These details are now included in the discussion with addition of a paragraph that centrally addresses this point and the evolution of the model. This reads:

“The work through the series of workshops and engagements has effectively developed and deployed a methodology that can be best represented as a *new climate praxis model*, based on Freirean theory (Freire, 1970). The model was very much an evolution through the project and emerged from the engagements.”

4. The paper could end on a stronger note by reflecting on what all of this means for climate education in disadvantaged or climate-vulnerable communities. How could this work be adapted elsewhere? What challenges might come up? What kind of support would schools need to do something similar?

>> An additional paragraph has been added to the conclusion to address this point and what it means for climate education in disadvantaged and climate-vulnerable communities. Notably we address the question R2 has concerning how the work could be adapted for elsewhere. This section now reads (Line 555): *“Participants shifted from initial disengagement and misconceptions to an empowered understanding of their role in addressing climate challenges. This offers critical insights into how climate education can be made meaningful and transformative for disadvantaged or climate-vulnerable communities by centring local relevance, emotional engagement, and creative expression. The Climate Praxis Model demonstrates that even in communities that are initially disengaged from climate issues, young people can become powerful agents of change when education is responsive to their lived experiences and cultural context. Adaptation of this model elsewhere would require a strong commitment to place-based learning, teacher training in emotionally responsive pedagogies, and institutional flexibility to move beyond standardised curricula and deficit-driven models. Key challenges may include educator confidence in facilitating open-ended creative work, and the need for localised climate contexts and community partnerships. However, as the success of this project has shown, such investment can yield not only deeper climate literacy but also foster the empathy, hope, and agency needed for collective climate action, particularly in communities at the frontline of environmental change.”*

5. While Freire is used for critical pedagogy, the paper sometimes relies on him a little symbolically. A more grounded use of his work could enrich the analysis. Also, adding more recent references in climate education would situate the work more firmly in the field and help readers connect it with similar efforts globally.

>> The paper does rely on, and is inspired by Freire. This has been made clearer in a few places in the text. To address the key point of R2 here additional contextual references to climate education have been added to elements of the introduction and discussion.