

Solid Earth Discuss., referee comment RC2
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Comment on se-2021-107

Anonymous Referee #2

Referee comment on "The Mid Atlantic Appalachian Orogen Traverse: a comparison of virtual and on-location field-based capstone experiences" by Steven Whitmeyer et al., Solid Earth Discuss., <https://doi.org/10.5194/se-2021-107-RC2>, 2021

- The first three sections focus on providing a detailed description of the course itself. Traditionally, in APA formatting a lot of this content might be reserved for a "present study" section or within the Methods section. Related, a lot of the background for the survey design on historical inclusion of diversity within geoscience could be moved into an "Introduction" section. Please check on the requirements of the journal (this might be okay and just an organizational style I am not used to). It does read clearly, but feels more conversational and less theoretically-driven.
 - Related, each paragraph seems to begin by identifying the personal experience of the educator, how they went about trying to make the virtual field trip the same as the actual field trip, and then (sometimes) reference to previous literature. This likely reflects the experience of the educator, but I wonder if the theoretical argument of the manuscript would be strengthened by prioritizing theory that then drives the development of the curriculum? For example, there are no citations provided in section 3.3, suggesting everything discussed was from the educators' experience. Another example is the paragraph beginning on line 247, which begins by identifying the need to adjust teaching styles. There is a body of research examining teaching styles in online versus in-person contexts – why not begin with relevant theoretically-motivated, empirically-evaluated principles and then show how they were used to design the curriculum? In this way, the sections of the introduction might be framed around key issues/concerns when developing any field experience in a virtual space.
 - In addition, I think these introductory sections would be strengthened by adding a focus from cognitive psychology and education on people's reasoning within real versus virtual environments. For example, are people able to navigate in the same way in both spaces? Can people develop mental maps of space when navigating through virtually vs. physically?
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- The section on Community Access to Virtual Field Experiences does not seem to be part of a larger logical argument. How does this section inform the current study? Did the

current study use these materials? Take similar methodological approaches? (I think this may be the aim of the section, but should be explicitly identified).

- Could you provide more information regarding the methods?
 - What questions were asked? Or if too many to list all, could you provide the number of questions under each theme and a metric for internal reliability? Were they open-ended questions or multiple choice?
 - How was the data were coded into themes? Did you obtain a metric of inter-coder reliability?
 - Were the respondents' demographic information similar across cohorts? What span of years were the previous students drawn from (e.g., the last 1, 5, 10 years)? Is the course offered in the Spring and Fall semesters (in which case previous students in the Spring semester may have different experiences then offerings in the fall because they have more student experience)? Did the same educator teach in the previous years (if different this may have influenced the results)?

- The introduction should discuss preferred learning styles (which is a technical term in education) since that is a main outcome of the survey. To note, there is research showing that aligning teaching styles with students preferred learning styles does **not** improve learning. That student learning is more influenced by aligning appropriate teaching styles as per the content demands