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Reply on RC2

Kevin H. Mahan et al.

Author comment on "Virtual mapping and analytical data integration: a teaching module using Precambrian crystalline basement in Colorado's Front Range (USA)" by Kevin H. Mahan et al., Geosci. Commun. Discuss., <https://doi.org/10.5194/gc-2021-9-AC2>, 2021

6/17/21

Online discussion response to Reviewer 2 comments

Thank you very much, Reviewer 2, for your helpful review! We offer responses to the main comments below.

Reviewer 2 expresses four main concerns in their general comments. The first is the desire for some more specific reflection on how effective the module is with respect to discipline-oriented learning objectives. And that we did not include response data from our pre- and post-course questionnaires. As we responded to a similar comment from Reviewer 1, while it is true that we have ran this module twice now (July 2020 and Spring 2021) and we used the questionnaires in both courses, we cannot legally publish the results because we were not certified by CU's Institutional Review Board to conduct research on human subjects. However, we will look for ways to share more generalized insight from these responses and will plan to include this in our revised manuscript. One item that is already shared in the current manuscript is how much the students valued the "drop-in" meetings with individual mapping partners. Another point that we can make in the revised manuscript, a sort of "lesson learned", is that we did not use the current version of the "Station description request and justification" form in our first running of the module – specifically, the prompts for hypothesis-testing were added in between our two courses. We found that the students needed to be held more specifically accountable for justifying why they wanted to "map" in a particular area on each successive day. The modified, and now current, version of this forms addresses this initial shortcoming. We will add these reflections to the revised manuscript. Unfortunately, we are not aware of students who took our course and then conducted field work, and so we have no specific insight from that potential perspective. It is still probably too early to know.

The second point is that the reviewer suggests adding a module outline early in the manuscript. We acknowledge this good point, and will plan to add an explicit outline of the module early in the revised text.

The third point is that the reviewer suspects releasing data once each day does not capture the real-time decision making that is an important field skill. We are in complete agreement here - this is where a virtual exercise like this definitely falls short (most will, we suspect). The module is not designed to help students develop basic field data

collection skills, for example, initially identifying relict bedding or different generations of foliations or folds, or how to measure the orientations of these features. Instead, we have to assume that these basic skills are in place and if so, here's an opportunity to take that data forward and work with it at the next level of relating outcrop-scale features to map-scale features. And also as the reviewer points out, it is an opportunity to integrate the field-based data with other types of data.

The fourth point is that the reviewer wonders if a modified version of data release (several times per day instead of once per day) or modifying the station descriptions to take some of the initial field interpretation such as prompting students to interpret shear sense rather than having it provided would be advantageous – our response is that our description of what we did are suggestions only, whereas other potential instructors of course have the freedom to modify this. We will make this point in the revised text.

Reviewer 2 also made some specific comments by line item. These are all very helpful and we will address them in our revised manuscript. We highlight one with a response below.

Line 80: What is the "google earth web project?" Reviewer 1 had a similar question, so obviously we did not make this clear enough initially, and we will clarify in the revised manuscript. The GEW project is for planning and better visualization of the stations only – it is not required. While the Google Earth satellite imagery resolution appears to be a little better than what is provided by StraboSpot, the main advantage is the extra 3-D visualization provided by Google Earth draping the imagery over a digital elevation model, which is not available in StraboSpot.