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Comment on gc-2021-28

Jessica Pugsley (Referee)

Referee comment on "From Virtual Field Trip to Geologically-Reasoned Decisions in Yosemite Valley" by Nicolas C. Barth et al., Geosci. Commun. Discuss.,
<https://doi.org/10.5194/gc-2021-28-RC2>, 2021

Review of: From Virtual Field Trip to Geologically-Reasoned Decisions in Yosemite Valley.

Nicolas C. Barth, Greg M. Stock, and Kinnari Atit

Dear Simon Buckley,

This valuable contribution provides a concise outline of what appears to be a well-constructed virtual field trip (VFT) within Google Earth that can be used for entry to high level geoscientists. It offers some reasoning of the VFT, an overview of the components, and a discussion on the technicalities of using Google Earth as a platform. In addition to comparisons with some other forms of VFTs, and insights into how VFTs can provide an effective learning platform. My comments are listed below, and I recommend minor revisions.

Sincerely,

Jessica Helen Pugsley

University of Aberdeen

17/10/21

Main Points:

1: VFT Link

A direct link to "four-part Geology of Yosemite Valley module" would benefit from being

added to the introduction if it is publicly available as stated. In addition to the general "Teaching with Online Field Experiences" link in section 2.

2: Geology vs Geomorphology

In places it is unclear if the students are interpreting geological features or geomorphological features. If students are describing geomorphological features but relating them to the geology of the area, this should be clarified potentially with examples, or where appropriate, the term geomorphology used.

3: Introduction

The introduction is clear and concise however it lacks references and context, perhaps sections of the discussion (3.2) outlining VFT Formats, would be better placed here.

Minor points:

L14-15: "Upper-division" unclear within this context external to US to my knowledge, consider another.

L17: 'Scaffolds' as a term in this context not particularly clear, consider another word or phrase.

L31: Consider adding some references to this, there are several examples of such alternative courses now published. More generally there is not a single reference within the introduction, while much of what is mentioned is either general knowledge or specific description of the Yosemite Valley VFT, there are sentences which could be substantiated through references.

L43-45: 'instructors thought' vague, do you have any data to support?

L43-44: "course" and "module" both used, consider clarifying.

L46: "potential" used twice, consider another word or phrase.

L55: this link is to a general Teaching with Online Field Experiences page and not the VFT mentioned, is there a direct link to the VFT if publicly available?

L57: Does the module work on a smart tablet within google chrome and Google Earth Pro? If so, add 'touch-screen' or 'remove trackpad or mouse'.

L72: what is described are commonly referred to as 'live edits' or a 'real-time' project/document.

L84: 'look direction' vague, consider 'view orientation'.

L84: Clarify what is meant by 'imagery'?

L103: unclear what "probably ideal in most situations" means

L122: The "exceptional quality" of Google Earths photogrammetry mentioned is through the google earth '3D Buildings' layer, which covers numerous cities globally in addition to some national parks (mainly within the US). The raw data is collected through low-flying

erial photogrammetry, not satellite imagery as this contribution describes. This data is currently restricted to cities and national parks, consider mentioning. If you turn off this layer you will see the quality of the satellite imagery below area in figure 3c.

L122: The use of "exceptional, excellent, and good" noted here and elsewhere in paper, try to use more objective language.

L137: "It is a simple matter" unnecessary, consider "to continue".

L172-173: Where is the lidar data sourced from that the students use to make hillshades? If data external reference source. Also clarify what a hillshades map is.

L176: Consider removing "fairly".

L178: "Summer field" vague, not a term commonly used in Europe.

L181: How did you measure the quality; do you have the data?

L182-184: Is there data of how many students recognise these features, rather than stating 'many' or "nearly 100%".

L185: "Geomorphologically-reasoned" rather than Geologically-reasoned seems more appropriate" in title of section and text. Unless students are relating their geomorphic observations back to the underlying bedrock geology, if so, explain in text and potentially provide an example.

L187: Is hazard 'line' a common term? Consider polygon, outline, or area, unclear what "hazard line" describes as a noun.

L199: Would 'Gynomorphically-sound' work better in this context?

L219: 'Look direction' informal, consider "view orientation".

L226: May also be worth mentioning the geology specific virtual outcrop repository V3Geo.

L271: Link does not work on 17/20/21

L289-292: Unclear the relevance of these two sentences, either elaborate and link to the VFT presented or remove.

L296: What does "excessive cognitive demands" refer to and how is excessive defined?

L299: Consider "framework" rather than "scaffolding".

L308: Example using tree unclear, consider another.

L301: Again "scaffold", while I understand the use doesn't seem right in this context.

L324-328: percentages given but no information on the methodology, numbers of students involved and percentage of class. Please elaborate.

L335-336: as with upper-division, 'major' also not commonly used external to US to my knowledge.

L345: figure 1. text not legible within B, unclear if this is needed.

L359: figure 3: scales on screenshots would benefit readers unfamiliar with the area.

L380: Use of "hazard lines", clearer in context of figure than in text as they are further explained here.

L445-447: No mention of Putnam et al, 2015 in text.