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Hydrology and Earth System Sciences Discussions

Interactive comment on "Training hydrologists to be ecohydrologists: a "how-you-can-do-it" example leveraging an active learning environment for studying plant-water interaction" *by* S. W. Lyon et al.

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The manuscript is well written and reads easily.

Given the very small sample size and lack of direct testing of learning outcomes relative to a control group, most of the conclusions are simply anecdotal. It isn't realistic for the authors to more rigorously test the learning outcomes, but it might be useful to consider with some additional criticality whether more "active" learning (TLA 3) is always the best

teaching approach.

For instance:

i. How does "active" learning influence long term retention and application of knowledge? Do students build a sufficient mental framework that allows them to connect an experiment they did over a day or two to other concepts in the same or different discipline?

ii. Are there certain topics that are less suitable to "active" learning? Certainly, learning about experimental design, learning how to make measurements, and learning how to interpret experimental data is probably best taught by trying to carry out an experiment. But, are more theoretical aspects of the science suitable for active learning?

Additionally, I have a few minor suggestions:

1. Page 9339, Line 7: Could an additional line or two further summarizing McClain be added? While McClain is cited, most readers don't really want to immediately go read the McClain paper. What do McClain et al. see as the "pitfalls and complex challenges" of teaching ecohydrology?

2. p 9342: Could TLA be written out in full on the subheading on this page and on subheadings on subsequent pages? I realize the convention is to establish an abbreviation once and then only continue to use the abbreviation. However, since most readers are unfamiliar with the TLA abbreviation, it would help clarify the organization of the paper to write it in full for the headings.

3. p 9346, 1st paragraph: I didn't quite understand how "active" is being used in this sense. If the student is directing their own learning, aren't they always actively involved (relative to a lecture)?

It seems like the distinction is more along the lines of "goal-oriented" (TLA 3) versus "exploratory" (TLA 1) activities. I would consider both to require near equal amounts of student action.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 9337, 2012.