

Art reflects student perception and observations during field experiences

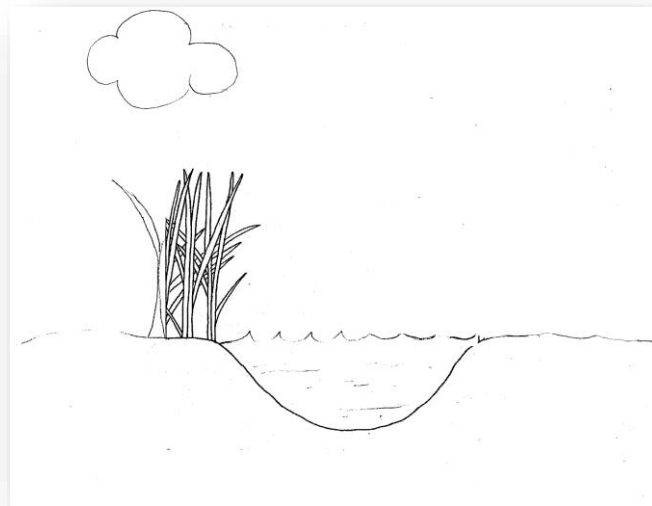
A pilot study with VCR Schoolyard LTER, VESLT, and A/NCPS

Both art and science are based primarily on observing. What do you see? How do you record, capture, or explain what you see? Studies suggest that outdoor experiences teach students to look more carefully – to observe. The challenge is how to assess this important change.

Further background and supporting logic: Today's world is dominated by screens and technology, making many of our experiences 2-dimensional, with little depth or complexity. Exploring outdoors brings our focus to 3-dimensional spaces, where our brains have to adjust in order to see through the layers of complexity to notice particular objects. That experience can rewire our brains in ways that make us better at observing – noticing details or finding particular elements.

Objective: Do changes in art composition support the idea that children look more carefully – become better observers – after outdoor experience?

This project: We expected that art can provide a way to learn more about what students see and how outdoor experiences shape their observation and understanding of the world around them. To see whether and how drawings change before and after a field experience, we partnered with teachers in Accomack and Northampton County Schools whose second grade classes participated in Virginia Eastern Shore Land Trust's annual Nature Walk. Students were guided through the marshes and forests of the Nature Conservancy's Brownsville Preserve by Hali Plourde-Rogers and Land Trust volunteer naturalists. The art of 98 students was included in this assessment.

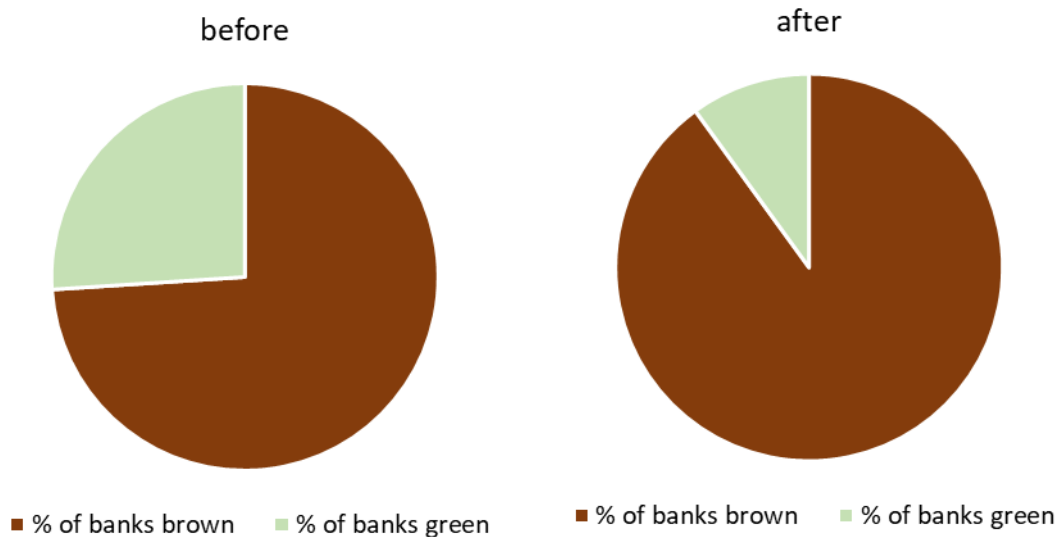
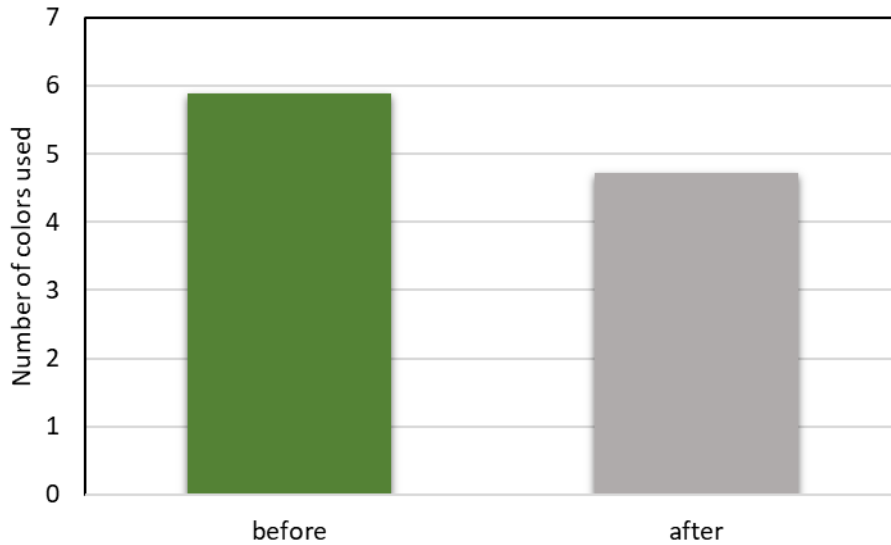


Student drawing template for the Nature Walk.

Hypothesis 1: Drawing colors will change to more accurately reflect the the environment observed during the experience.

Prediction 1: Usually we would expect the number of colors to increase as students observe the complexity of nature. However, due to the November visits (and dreary weather), we expected students to use fewer colors and more browns and neutrals after their visit.

Outcome 1: Changes in number and use of colors reflect the autumn conditions of the marsh and forest.

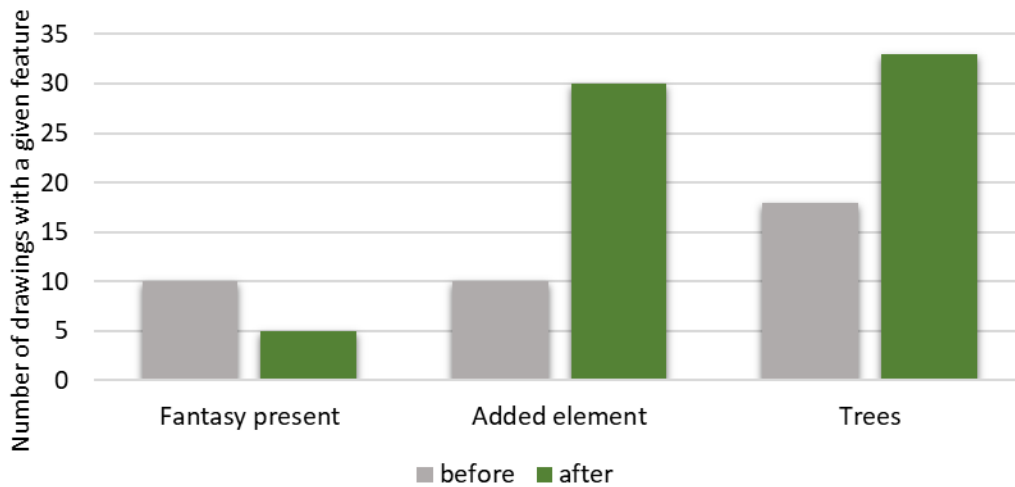


Hypothesis 2: Drawing content will be more realistic after the visit.

Prediction 2.1: The presence of fantasy elements (e.g. dinosaurs) will decline after the field experience. Instead, students will draw true details of the landscape they explored.

Prediction 2.2: Drawings will contain new and shared elements after the visit that reflect details they observed during the walk.

Outcome 2: Fantasy elements declined, trees and other nature-based details became more prevalent.



Added elements, which were shared among many “after” drawings, included deer, berries, and cattails.

Initial conclusions: Student art changed due to the field experience with VESLT. Contrary to our initial expectations, drawings did not become more colorful after their visit. Thanks to the presence of imaginative elements, drawings also did not necessarily become more detailed. Instead, their art became more realistic and reflected the seasonal conditions of the wetlands and forest they visited. The experience clearly drew their attention to details they hadn’t otherwise associated with a wetland landscape – a sign of heightened observation.

Second grade students were surprisingly knowledgeable about marshes before their field experience. We expect that their existing knowledge diminished the differences between their drawings. Imaginative drawing by second grade students also made changes more difficult to assess due to the presence of imagined – but sometimes logical – elements (e.g., ducks, rainbows). Nevertheless, students depicted many specific details that guides reported seeing during the visit. Elements that emerged after their field experiences suggest that drawing may be a useful tool for identifying the most exciting features that students observed. Extracting these observations could help guide follow-up discussion in class, perhaps even bridging into the asking, hypothesis forming, and testing portions of the scientific process.

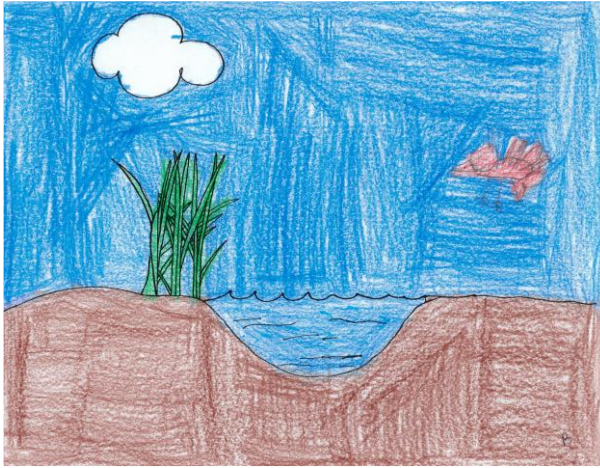
Insights for field experiences: Students retained a remarkable amount of detail from their field experience. The influences of naturalist guides is very clear from shared features in the drawings. Variation among sets of drawings showed the hallmark of different highlights among group leaders. If there are key points that all students are expected to gain, those should be made explicit for the group of guides. Perhaps most exciting, the complexity of drawings both before and after the field experience suggest that the students – even in second grade – are prepared for and excited to gain higher level knowledge about natural systems and processes. They drew trophic relationships, below ground communities, and many other advanced relationships and processes. This suggests that they could absorb knowledge about even more complex dynamics during their visits.

Next steps in art-based assessment: We will display example before/after comparisons of drawings. We would like to try this exercise again with older students (4th and 5th grade) to gauge outcomes among ages that are more literal in their compositions. In future sessions we will also collect data on whether students had ever visited marshes before the current field experience. We expect greater changes in composition among students who visit wetlands for the first time during their field experience.

Examples of resulting art



Before



After

