Revealing Systemic Impacts of a 12-Year, Statewide Science Field Trip Program

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What experience can you share regarding tracing the effects of informal learning experiences beyond the individual participant (e.g., on schools, families, communities)?

Gulf of Maine Research Institute

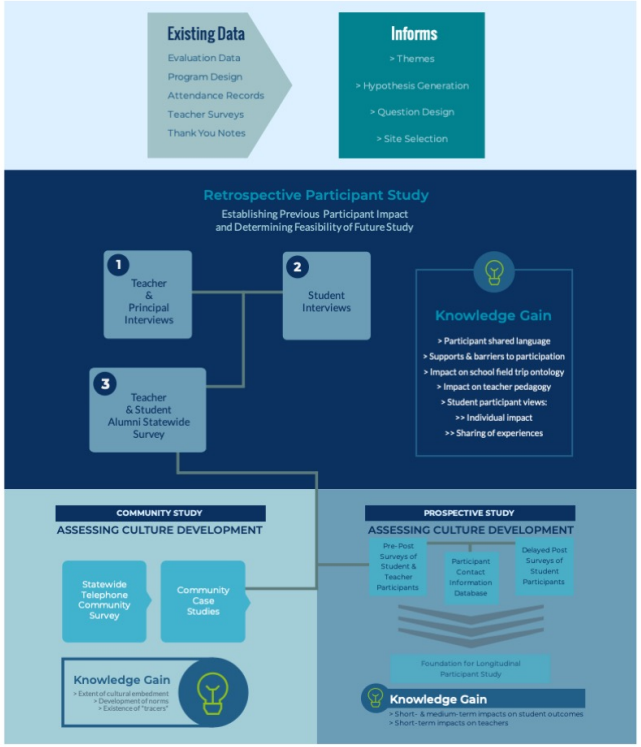
The Gulf of Maine Research Institute (GMRI) is a marine research lab on the waterfront in Portland, Maine that conducts basic marine science, engages a variety of marine stakeholders, and provides authentic science experiences for middle school students across Maine.

LabVenture

LabVenture is a discovery-based education program at GMRI that forms the basis for the study due to its unusual characteristics:

- Running continuously since 2005
- Hosts ~70% of Maine's 5th/6th grade cohort annually
- 125,000+ students served
- 100% free including transportation
- 2.5 hour program focused on Gulf of Maine ecosystem
- Blend of technology, live marine species, and the tools of science

Research Structure and Challenges



This research investigates a mature program at the intersection of in- and out-of-school STEM learning. This includes research at the community level responding to the NRC call to better understand how out-of-school programs impact outcomes across settings and time.* Some research challenges include:

- How to pick up a signal of impact at community level?
- How to integrate research findings from multi-layer, complex research design?
- How to recruit and engage participants across multiple study levels?

* (NRC 2015, Identifying and Supporting Productive STEM Programs in Out-of-School Settings)

Research Focus: Tracing a Learning Ecosystem

How does a long-lasting, statewide, out-of-school science learning experience influence how key stakeholders think about the value of out-of-school learning and its intersection with in-school learning? What can such a program reveal about the Maine science learning ecosystem?

STEM Learning Ecosystem Model

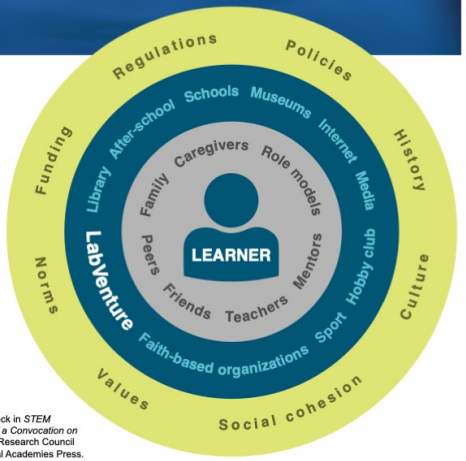


Illustration Adapted from M. Storksdieck in *STEM Learning Is Everywhere: Summary of a Convocation on Building Learning Systems.* National Research Council (2014). Washington, DC: The National Academies Press.

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