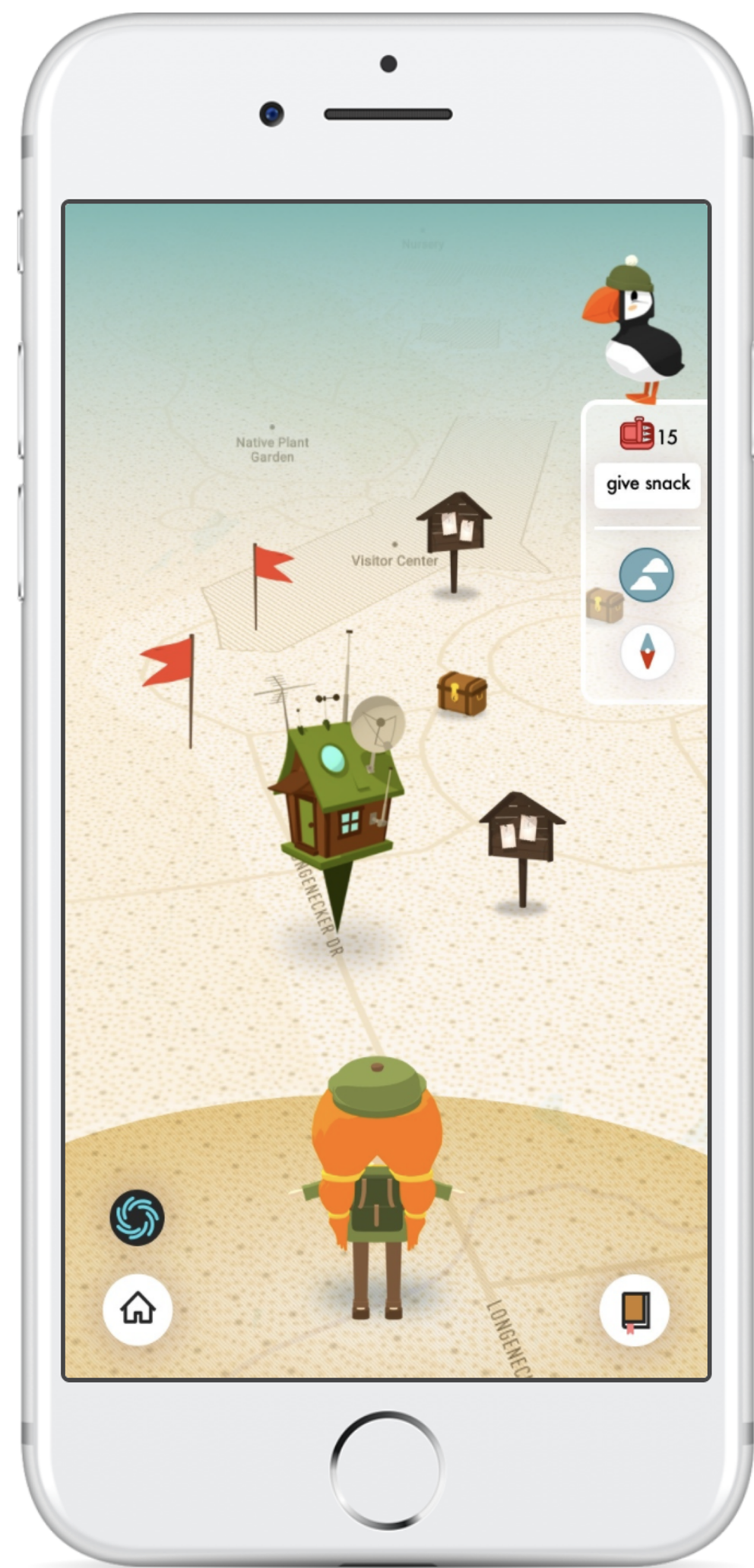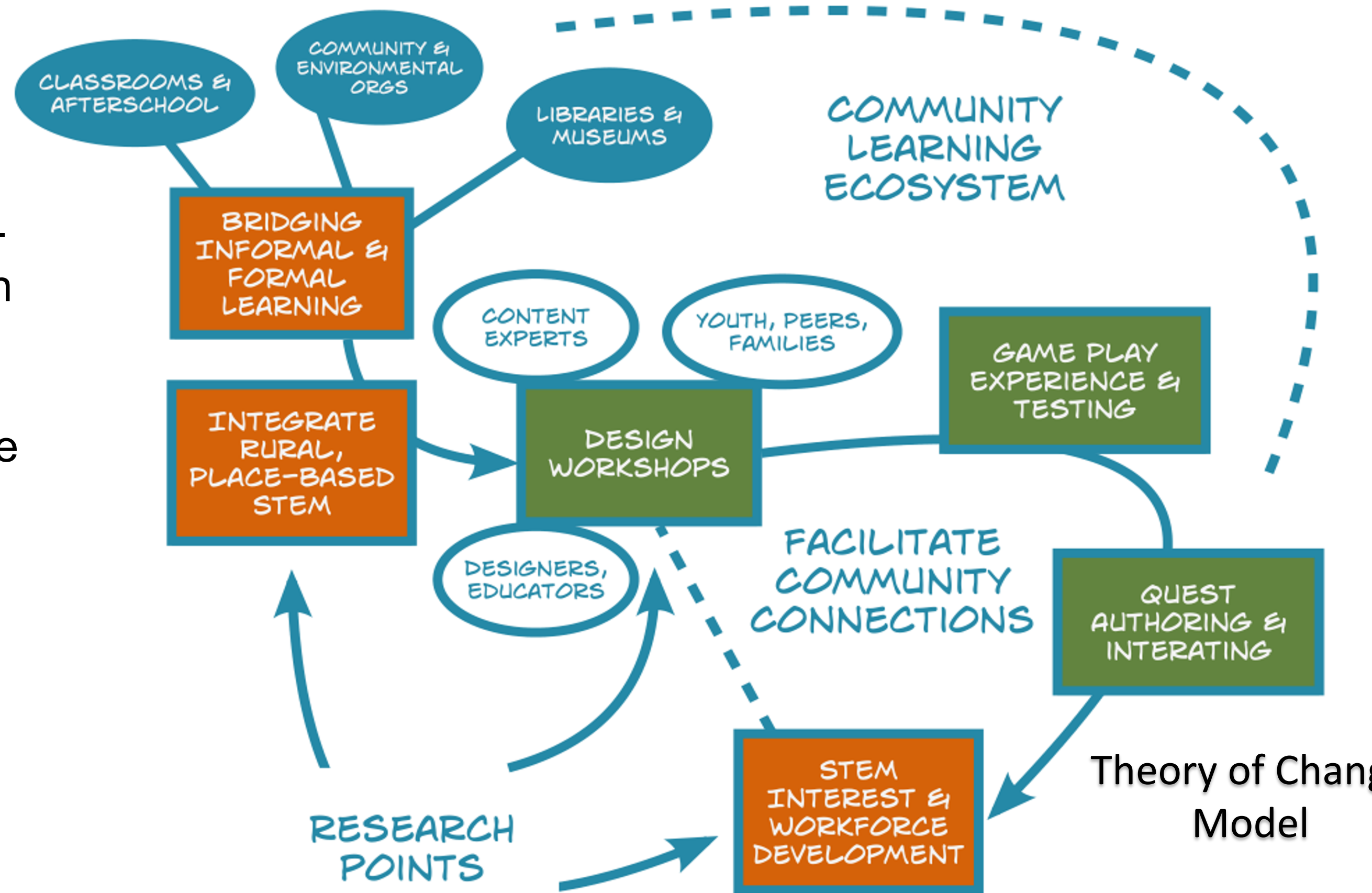# STEMports: Community Workforce Development through Augmented Reality STEM Learning Experiences
1831427 | IRG FY2018

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BASE STATION connects and engages communities in Maine around STEM workforce development. It involves youth and families participating in an augmented-reality (AR), STEM learning game. Through interactive location-based adventures accessed through a mobile device app, youth and families learn about local science challenges, STEM mysteries, and past, present, and future STEM career opportunities in their own town or region. The project implements a co-design approach that forms teams of youth (ages 13-18) and adults to test and pilot application prototypes as well as author content and missions that provide insight into game development and mechanics.

Theory of Change Model

→ Understand how community game design and authoring activities impact rural STEM interest and workforce development
→ Optimize design elements for workshops and game play to facilitate community connections and STEM learning

**Placemaking in Location-Based Learning Games:**
The process of constructing augmented "places" within Base Station seems to link content, learning, and community in ways that are more relevant for players/learners.

Placemaking tasks and stages

- ***Place articulation and elaboration*** - why is the place important - how does it relate to a community problem or solution

- ***Place amplification and extension -*** weaving a story around one or more places as a *narrated quest*

- ***Place bridging and connecting*** – connecting between quests and communities

Influence of Design Roles and Spaces in the Co-Creation:
- Rethinking co-design process as not just about voice-and-choice or depth of design work,
- but about creating roles (content or workforce expert, game tester/ editor) and spaces that enhance the design work and impacts
- Structuring interactions to allow co-creation to emerge and not be forced

WEB-BASED EDITOR for quest authoring and rapid prototyping
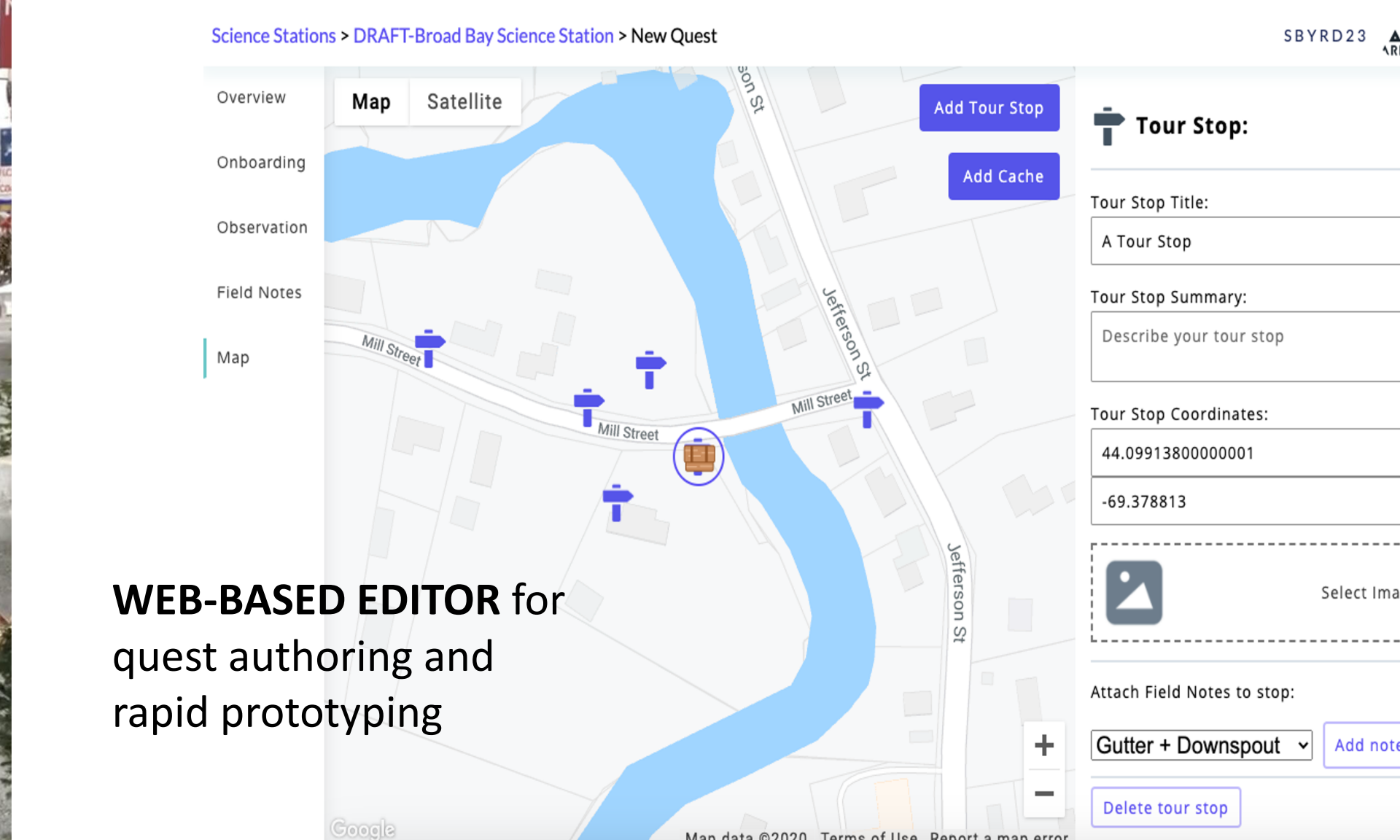
Connecting communities through virtual play:
"It also has the capacity to start connecting students to the island regardless of whether they're on the island, because they can create quests and work on them virtually. And then they could also take the quest that's on island and find ways to do a continuing quest back in their home community. So what does aquaculture look like on an Island? What does aquaculture look like in Damariscotta? "
Educator, informal science learning

Outcomes and Success measure for next year
- Complete app and editor development; Capture data analytics (open game data project)
- Conduct authoring workshops and collect data on the impacts of co-design and placemaking
- Research community connecting through network analysis