

Attitudes toward Land-Based Aquaculture (RAS) in K-12: Parents, Teachers, Administrators— A Two-Study Proposal

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Challenge

- Even though the advantages of land-based aquaculture (RAS) are well recognized, many communities still resist local projects — citing environmental concerns, energy use, perceived risks, and low trust.

Focus

- This study seeks to **bridge the gap** between what is *known* about RAS and what *key audiences* — parents, teachers, and administrators — *believe*.
It builds on insights from the **EU COST Action “OPINION”** network, which highlights that, in the social-media/AI era, people struggle to distinguish between evidence and narrative, and between fact and m perception.

Why this matters - background



- Attitudes significantly impact the adoption of curriculum and the development of career-technical education pipelines.
- The advantages of land-based aquaculture using RAS are well known.
- Information exposure, active information seeking, and the use of reliable sources are associated with higher acceptance and support for aquaculture (Rickard & Yang, 2023).
- A scoping review and media analysis reveal that media narratives shape public views on aquaculture—misinformation and limited exposure fuel concern and skepticism (Budhathoki et al., 2024).

Why do people often fail to seek or use accurate sources?

Two cognitive-motivational mechanisms have been identified in recent research

1. **Motivated information avoidance (Lay Epistemic Theory).** People may avoid, delay, or down-weight relevant information to serve motivational goals—either **directional** (protect a preferred belief) or **non-directional** (reduce uncertainty).

These motives can block exposure to accurate content (Czarnek, Jaśko, & Kruglanski, 2025).

2. **Illusory truth effect.** Repeating a claim makes it seem truer; a simple alignment label (“science-aligned” vs. “skeptic-aligned”) removes this effect for claims people oppose (**counter-attitudinal**) but keeps it for claims you already agree with (**congenial**) (Jiang, Newman, & Schwarz, 2025).

These mechanisms motivate testing message framing and a light-touch alignment-salience cue. If we understand the biases people bring to information, we can frame messages to strengthen the intended claims in the proper context.

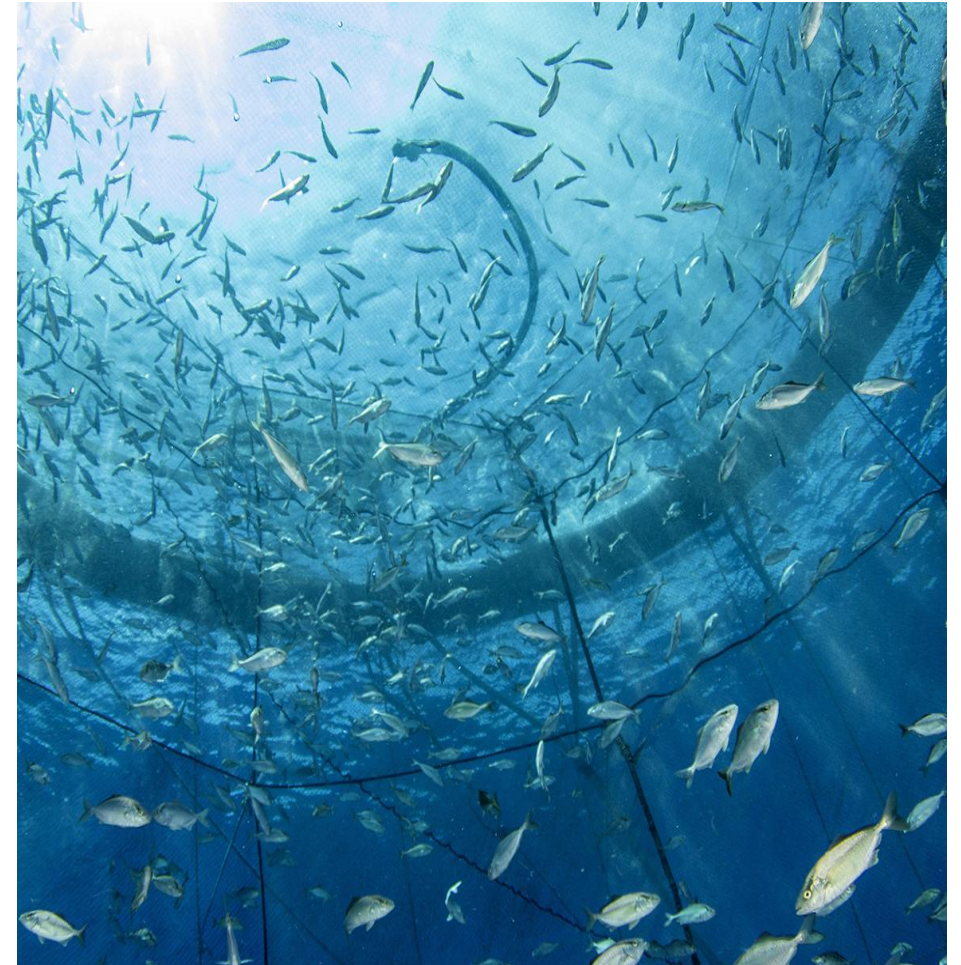
Education context

Parents, teachers, and administrators face an overwhelming amount of information online.

AI-generated content can appear authentic—even when it is inaccurate or unreliable.

- In K–12 districts and CTE programs, educators' and administrators' attitudes shape adoption and resource allocation.
- Hands-on RAS labs can deliver inquiry-based science and local career awareness.
- Media literacy and transparent messaging can support trust.

This project focuses on attitude formation among these educational actors to inform realistic, school-level planning.



Audiences: Parents, teachers (STEM/Ag/Env), administrators (school leaders, CTE, district, state).

Five aquaculture states (MD, ME, CA, WA, FL), comparison state with no aquaculture presence.

Core measures (all audiences)

- Familiarity and perceptions of aquaculture + familiarity and literacy with RAS (Badiola et al., 2012).
- RAS-specific benefits and risks (Brown et al., 2024).
- Trust in institutions, regulators, and industry.
- Support for curricular adoption and local RAS facilities.
- General attitudes toward science.

Study 1: Baseline mapping



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Audience-specific modules

Parents: Parental career-related behaviors (Dietrich & Kracke, 2009).

Teachers/Administrators: CTE pathways and barriers; facility readiness for RAS.

Sampling and analysis

- Parents - online panels.
- Teachers & administrators - districts, professional lists.
- Regional RAS visibility will be coded.
- Analyses compare audience × region × aquaculture presence.



Study 2: Information framing mini-experiment

Goal. Identify messages that raise acceptance and trust.

Design. Random assignment to **two** short frames (200–250 words):

- Careers & Local Benefits: workforce, career routes, local economy; RAS creates local, skilled jobs in water quality and systems monitoring.
- Sustainability & Safety: RAS reuses water and captures waste in a closed-loop system, supporting biosecurity, environmental sustainability, food safety, and transparency.

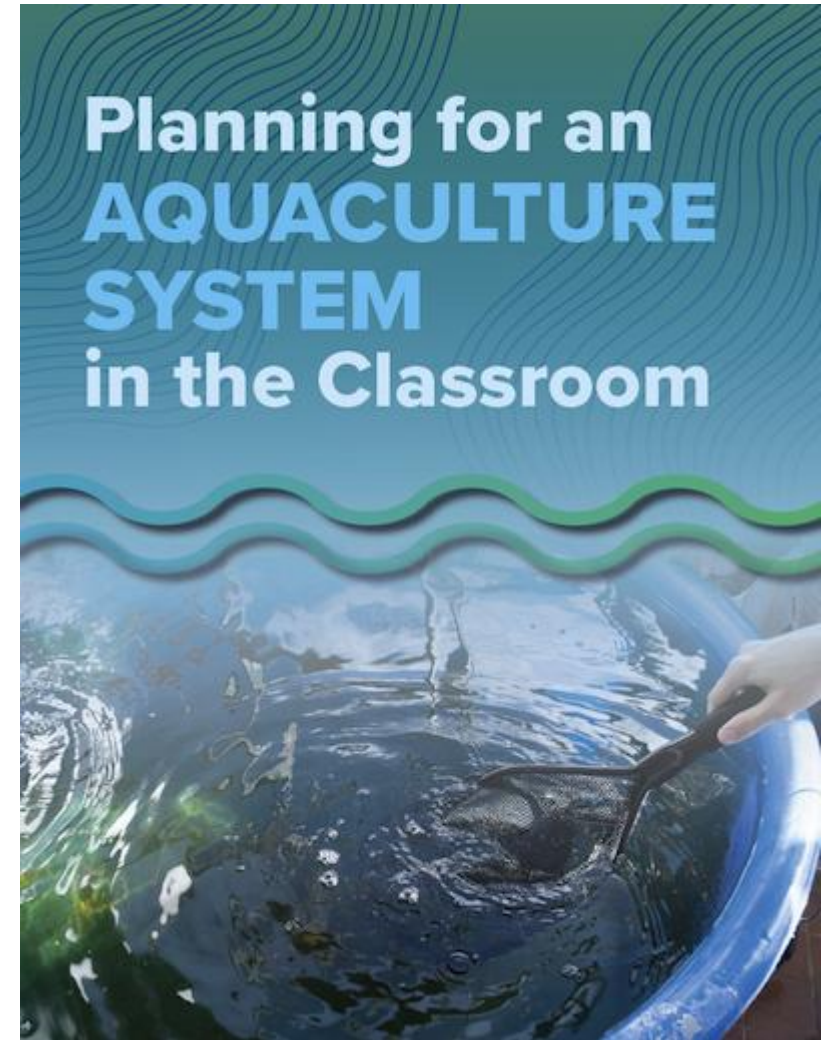
Audiences. Parents, teachers, and administrators each receive one frame across regions.

Outcomes (pre → post)

- Acceptance, trust, support for curriculum or policy, and behavioral intentions.
- RAS literacy will be tested as a moderator of framing effects.

What we aim to learn

- A **comparative map** of attitudes and trust by audience (parents, teachers, administrators) and region.
- **Where** general aquaculture attitudes diverge from **RAS-specific** attitudes, and **when** technology knowledge narrows that gap.
- **Whether** polarization is higher in states with active aquaculture compared to states **with no aquaculture**.
- **How** different message frames affect **parents'** attitudes.
- **How** teachers' and administrators' responses **compare** with parents' responses.



Expected Contributions

- Three decision-relevant audiences are studied together.
- The design connects aquaculture education to public opinion theory under online conditions.
- It addresses motivated information avoidance (Lay Epistemic Theory) and illusory truth, and tests light-touch, scalable cues.
- Technology-specific insight: links RAS features to acceptance, informing siting communication and CTE lab planning.

