

NAAEE 2022, Research Symposium HANDOUT for CELI Research Roundtable

How Do We Facilitate Multi-Disciplinary, School Wide Climate Justice Education?

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Context and Purpose:

- Climate change and its impacts are an existential problem
- The impacts wrought by current and future climate change on human health and well being is exacerbated for low income communities (Estrada, 2017; IPCC, 2022)
- Learning about climate change in schools is one way to catalyze young people—who will become future leaders—to become climate change solutionaries
- A narrow science focus can neglect the social and political nature of climate issues, and fail to inspire young people to understand, hope, and act on behalf of their communities (Ojala, 2012)
- To truly address profound issues of climate justice requires a cross-disciplinary whole school approach that brings together the expertise and vision of teachers, students, community members, and scientists (Siegnier & Stapert, 2020; Zeidler & Newton, 2017)
- Our climate justice project was created to facilitate the design and enactment of whole-school, cross disciplinary climate justice curriculum

Research Questions

- How does the group of lead teachers at a middle school adapt to create thematic, cross-disciplinary between-classroom student climate justice learning experiences?
 - o What prompts adaptations? (disturbances, opportunities, data/feedback loops)
 - o How do resources, interdependence, diversity, and niche play a role

Methods

Case study design: Group of middle school lead teachers planning for, implementing, and reflecting on one cross-disciplinary unit taught across all 7th and 8th grade classrooms (science, math, ELA, history, PE, Art, SPED).

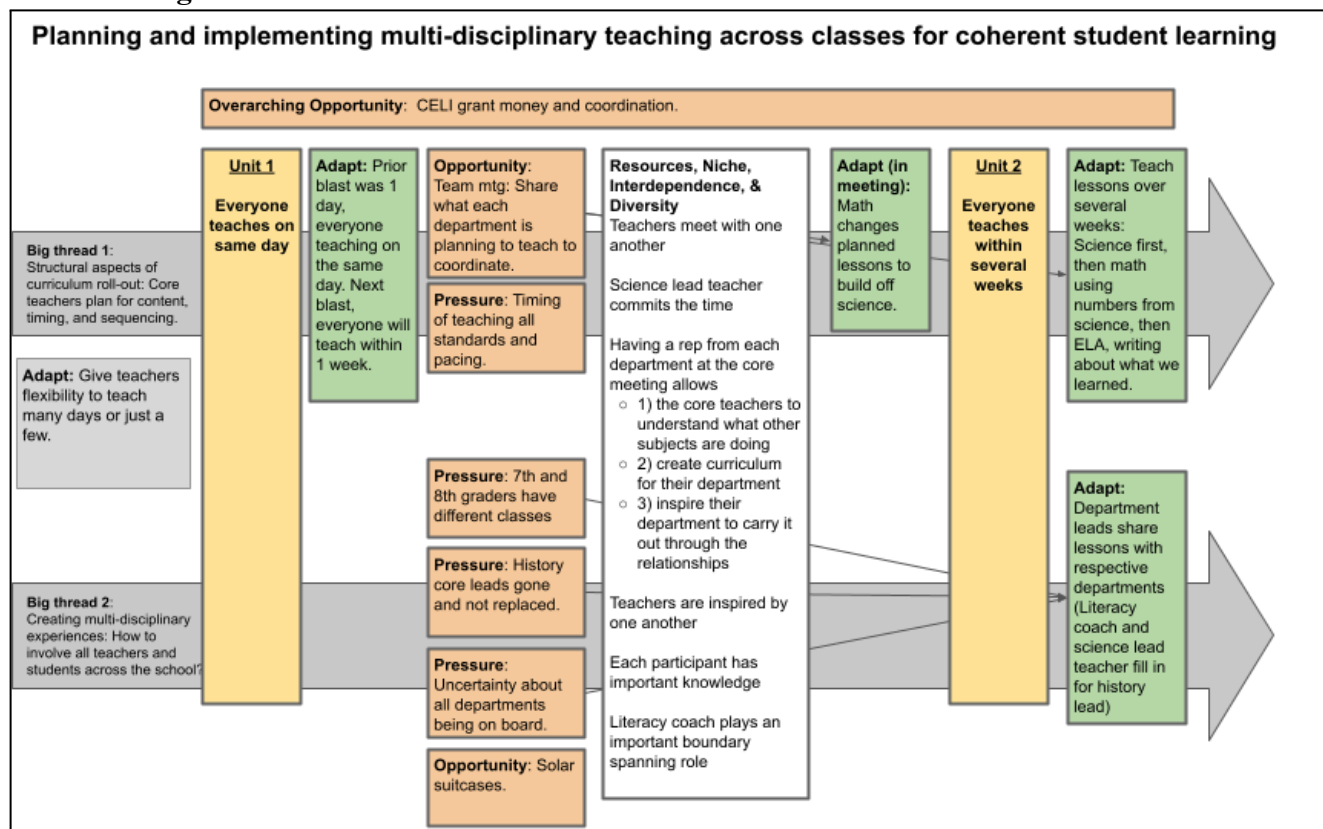
Data collection:

- Lead teacher meeting recordings before and after a cross-disciplinary thematic unit
- Researcher memos from January 27th, 2022 and February 24th, 2022

Analysis:

Codes drawn from ecological theory	Definition
Adaptation	Ability for a system to change while remaining consistent with itself and resilient.
Disturbances	Changes to the conditions that put pressure on the group and affect the system as a whole.
Feedback loops	Data and information that a system uses to regulate and organize itself.
Resources	Necessities such as time, capacity, expertise, etc. and their availability for a system to function.
Interdependence	The relationships between people at similar and different levels of the organizational system.
Niche	The roles people play within an educational community.
Diversity	Diverse ways of thinking, social identities, social positions, and experiences as educators.

Main Findings



Major process at work

Teachers meet with one another outside of the main meeting, within and across subject areas.

Peter commits the time to creating lessons for other teachers, including science and history, and to create science lessons that act as an anchor for curriculum creation.

Having a rep from each department at the core meeting allows 1) the core teachers to understand what other subjects are doing 2) create curriculum for their department and 3) inspire their department to carry it out through the relationships

Teachers are inspired by one another: Peter showcases his lesson, Matt is inspired to build off it in math, Lorraine's art is and inspiration for everyone.

Each participant has important knowledge to bring to bear in solving problems. For example, in planning to involve every single student in building a solar suitcase, multiple resources and knowledge were brought to bear- Peter, Jenny and Elaine know about classroom size, Colleen, who will be teaching it, brings knowledge about the students and how to organize them, Erik knows that Ryan is teaching the solar suitcase class, Karina knows where to get suitcases.

Elaine plays an important boundary spanning role as the coach, meeting with the principal, meeting with ELA and ELD teachers, and bringing curriculum to the history teachers.

Discussion

- Problem solving and adaptation is an iterative process.
- Resources, niche, interdependence and diversity play unique roles in positive adaptation.
- Positive adaptation can build resources, niche, interdependence and diversity.
- Cross curricular learning experiences have to be deeply rooted in existing culture, structures, and processes and can also shape them.