



Coproduction of Embodied Climate Curriculum Gains STEAM

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ABSTRACT Shine/Fossils in the Classroom represents a partnership between two CU Boulder departments and the Jefferson County School District that enabled the authors to coproduce an embodied exploration of fossils, energy, and climate for 4th/5th grade students in Colorado. This project addresses the current lack of embodied participatory learning that enhances retention and understanding of climate change. Over the past year, CU faculty, staff, and students teamed up with administrative staff and teachers in the Jefferson County School District to pilot the first draft of this new curriculum. In the next year we will continue piloting our revised draft of the lessons with a diverse set of 4th and 5th grade JeffCO teachers and document the coproduction framework that enabled this work to be successful.

A community-based project

Project partners at CU and Jeffco have worked together throughout the formulation and development of the lessons and will continue to do so moving forward. James Hakala has been working with teachers and administrators in Jeffco schools for the past six years and based on the strong relationships he built suggested Jeffco as an ideal partner. In summer 2018, James introduced Beth Osnes and Patrick Chandler to Cecily Klein (Jeffco Director of Curriculum and Instruction), Catherine Goodheart (Jeffco District Coordinator for Elementary Science) and Tammy LoSasso (Jeffco Theater Coordinator) to discuss initial plans for the curriculum, associated standards, and schools that would be a good fit for the project. The Jeffco team put a call out to schools and, based on the feedback they received, recommended we work with 4th and 5th grade teachers at Stober Elementary. From summer 2018 on, the CU team has met with teachers and administrators at Stober every four to six weeks to co-develop a project plan. We began piloting lessons in January and held a community event on April 23rd to showcase students' work on embodied communication and gather feedback on the project. Over the next year, we will work together as a CU/Jeffco team to continue piloting, publish the curriculum, and document the curriculum development framework.



Shine performance at Stober Elementary.

Project Rationale

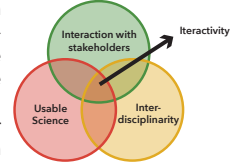
Actively involving students in climate change issues while they are still relatively young is important. Research reveals that pessimism about addressing climate change increases with age—particularly from early to late adolescence (Ojala 2012). It is essential to discuss resilience and climate concerns in a positive way. Michale Rohd, author of Theatre for Community Conflict and Dialogue: The Hope is Vital Training Manual writes that, "The act of expression is an act of connection—through it we become positive, active participants in our lives and in our communities" (Rohd 1998). Witnessing youth arts and performance gives adults hope. Engaging youth in solutions-oriented arts regarding resilience and climate change increases their level of hope and positive action. Giving youth a feeling that solutions to climate change are within their control can motivate behavior that benefits families, local community, and the world (Stevenson and Peterson 2016).



Research methodology

We have used techniques such as the Framework for Resilience Arts to Action developed by Osnes in her work with Diné partners while creating the Navajo Women's Energy Project. This creative process facilitates deep listening, critical community engagement, imagining desired resilience, and rehearsing and improving upon ideas for action in realizing that resilience. This framework has proved to consistently support communities in moving from concern to action relatively quickly in an inclusive, efficient, aesthetically stirring and fun way. The framework is designed so that ideas for action get rehearsed by the community such that likely obstacles are identified and solutions are devised and improved upon before actual resources are invested. The use of this framework will expedite and support the participation of youth and community members in authoring plans for action.

In 2005, Lemos and Morehouse proposed a co-production model that focuses on the components necessary for co-production of usable science in an iterative model. The following diagram describes their work: If the term "Usable Science" is replaced with "Usable Arts/Science Curriculum," then this model can be used to describe the work of our project. We hope to find the sweet spot of co-production by bringing an interdisciplinary group together with stakeholders (administrators, teachers and their students), through iterative meetings and hands-on workshops in order to develop a usable curriculum. In this case "usable" means that the resource will help educators create quality learning experiences and give youth a voice in their communities through classroom-tested lessons.



Contribution to the Field

The vast majority of climate and resilience curriculum resources available to teachers are created for them and not with them. This norm excludes teachers' knowledge and wisdom. We hope to shift this paradigm with a co-created curriculum. The framework for this project will offer a template for future partnerships between schools hoping to work together. This framework pertains specifically to embodied communication, which will benefit the fields theater and performance and of science communication through a case study that uses an innovative technique which draws from both disciplines. To our knowledge, there has not been a documented case in which youth were given voice through a classroom curriculum to bring climate and resiliency solutions to their community with the hopes of influencing decision-makers.

