CONVERGENT LEARNING FROM DIVERGENT PERSPECTIVES: THE IMPACT OF INTERDISCIPLINARY COLLABORATION IN INFORMAL LEARNING ENVIRONMENTS

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COHORT ACTIVITIES

Our ongoing NSF-ASEL project* brings together researchers with diverse disciplinary expertise to build collaborative projects that engage public audiences in science. This program is scaffolded by using best practices in informal science communication to build interest and group cohesion. Collaborative communication of the thematic content will be evaluated in three informal learning environments:

1) **Franklin Friday as STEAM Gallery:** Pop-up or incidental learning at presentations to public audiences at community events
2) **OH/IO program:** Experiential learning in a semi-structured environment with creative problem-solving challenges for youth aged 9-18
3) **COSI after dark:** Informal learning through presentations on a convergent topic at a science museum.

Each team of researchers will present in the three treatments (individually, sequential non-collaborative, and collaborative). The project will evaluate outcomes and improve ongoing programs by integrating science learning, public engagement and peer mentoring. Our first theme was “Energy” which included individuals from material science, engineering, and psychology.

SELF IDENTITY

How do the scholars participating in convergent cohorts understand the practice of communicating science to the public?

Our first cohort of scholars received training similar to Portal to the Public at COSI in preparation for their individual presentations. The scholars judged the role of communicating science to the public to be in line with their views of themselves at teachers. They view their public communication as separate from their researcher (below). There was even some tension that their outreach and teaching were less valuable than research (below).

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GROUP IDENTITY

What are the learning experiences they derived from the process of developing their convergent project and hackathon theme?

The scholars had several brainstorming sessions to develop projects that reflected their expertise. Though they were initially unsure of how they could bring together their work, the group formed a community, as indicated by their reflections on the collaboration (below).

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CONVERGENT PROJECT: THEME “ENERGY”

Each convergent project aims to bring together the expertise of each researcher into a collaborative presentation. Our first cohort worked on the idea of using a wearable sensor to help caretakers understand a person with communication-related disabilities. This incorporated the study of autism with environmental and wearable sensor technologies. They tested their idea at COSI After Dark (right).

At the event, they proved that a sensor could tell when someone was in a calm mood or a state of agitation. They asked participants to look at a monitor displaying a calm ocean or a busy city street. Observers could tell when the participants transitioned between these two videos based on the sensor data. All participants got agitated during the city video, except one. In an interview, the one participant who was agitated by the ocean video has a fear of the ocean.

WORK IN PROGRESS

We have currently completed the first cohort with the theme of Energy. We are currently collecting data on the themes Movement and Space.

AUDIENCE REACTIONS

Does a collaborative approach enhance the presentation of science in informal setting?

Audiences were surveyed at both the After Dark events at the Center of Science and Industry (COSI) and the Franklin Friday art walk in the STEAM Factory space. We collected data from 6 events total, with 178 people surveyed at COSI and 100 at Franklin Friday. Audiences were asked about their interest in science, technology, math, engineering and art, as well as their interactions with our cohort. Overall, both audiences were interested in science before the event (below). After the event audience members increased their interest in science (left). The collaborative events (in red) were at the upper end of the range.

*Names have been anonymized.