



Craft, Reflection + Complexity

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Context

When: November 2023 - Feb 2025

What: Data crafting workshops for teens and children

Topic: Personal data; data about science museum & science

Data Crafts: paper-based abstract visualizations; data jewelry; data aliens; scrapbook maps

Craft served as the medium for co-creating visualizations with a local non-profit and science museum. Workshops run in collaboration with the nonprofit, were part of a youth leadership program for teenagers in the city. Across five workshops, data and visualizations were used as tools to spark reflection and discussion about the youths' lives. Each workshop lasted three hours and followed a similar format: we introduced a central question; the workshop participants created datasets about the topic; a visualization was made using crafting material; and finally, the crafts were used to mediate group discussion about the central topic. Across the workshops we made paper-based abstract visual representations, jewelry, and a scrapbook map.

In a related project, we created data craft workshops for young children as an after-school activity for the local science museum. Here the workshops were one hour long and began with a scavenger hunt around the museum to create data. The answers to the scavenger hunt were used to create aliens from paper, googly eyes, and pipe cleaners.

In both collaborations, we worked closely with domain experts --- a program manager at the non-profit and educators from the museum --- to develop relevant and age-appropriate data crafts. As a design constraint, we worked with material that was easy to purchase and required little to no prior knowledge to work with. This resulted in crafts made with paper, glue, stickers, tape, plastic beads etc. Our intention was to create reusable material for our collaborators so that they could run future workshops again without our support.

My interest in attending this workshop stems from reflecting on the generative moments while considering the challenges of co-designing and running data crafts workshops.

Who is crafting for? Using crafting and unplugged methods for engaging with data appealed to both teenagers and young children, with workshops at the science museum attracting more girls than other computer-centered activities. Although our workshops were not designed as educational material, exploring the social, historical, and cultural relationships between people and crafting can support avenues for more inclusive environments for STEM education.

What skills are needed for data craft? An initial pilot of the workshop with the nonprofit initially failed because we had left generating the visual mapping --- assigning different representations to data --- to the young women. This proved to be too little scaffolding that led to frustration, and most groups were unable to finish the activity. It also demonstrated that visualization knowledge was critical to the craft, and we had overlooked it.

Who designs data crafts? We worked closely with domain experts to co-design the data crafts with the goal that our collaborators could design and run their own data craft workshops in the future. However, on multiple occasions our collaborators said that they could not generate new activities without our help. This is a severe limitation of democratizing access to data through craft and requires understanding the skills necessary to work with data and visualize it through craft.

data craft examples



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