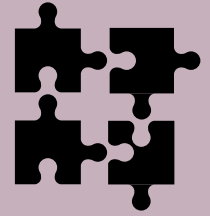


# Make Infrastructure Visible



TWO 45 MINUTE  
MEETINGS AT LEAST  
A WEEK APART

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## Activity Rationale and Aims

### Aims

01. To identify an artifact with your team that was designed collaboratively
02. To make visible the diverse forms of activity that are involved in the successful implementation of the designed program

### Activity Summary

This activity involves codifying the explicit and implicit and visible and invisible labor that surrounds one artifact. Collaborators will use a shared template to document the emotional, temporal, and physical infrastructure required to implement a focal activity. Once all collaborators have documented their activities, they will work together to generate a robust picture of the resources required to implement one activity.

### Rationale

This activity draws upon the concept of articulation work, defined as the labor of coordinating or integrating different strands of work (see Strauss, 1985), and invisible labor, defined as work that is intangible and often unrecognized (see Jurow et al., 2016; Suchman, 1995). Taken together, the concepts of articulation work and (in)visible labor help to conceptualize how human activity is made possible by a constellation of factors, including explicit, implicit, tangible, and intangible factors. This activity seeks to support collaborators in making visible the emotional, temporal, and material infrastructure required to sustain projects.



# In Person Steps

## WHOLE GROUP PREWORK:

01.

Identify an artifact that was designed collaboratively (for example: an app, an evaluation tool, a lesson plan, a mentoring guide, etc.).

02.

Ask collaborators to first engage with focal ideas via writing. Introduce the concept by asking collaborators to respond to the prompt: “What conditions had to come together for this [the identified artifact] to come to be?” Once that is addressed, then ask collaborators to write on: “And what conditions had to come together for THAT to come to be?” and so on.

- a. Have collaborators write for 10 minutes in response to this repetitive prompt intended to develop multiple layers of a story.
  - i. Encourage collaborators to write their story from an “I perspective.”
- b. Share out, identifying contradictions and tensions.

## INDIVIDUAL “TAKE HOME” ACTIVITY:

01.

Identify a week-long period where the selected artifact will be used. During the week of implementation or use, have collaborators create [digital journals](#) where collaborators can keep notes of their interactions with the artifact.

- c. Interactions consist of activities such as time thinking about the artifact, noticing feelings related to the artifact, conversations about the artifact, making adaptations to the artifact, work on the artifact.

## WHOLE GROUP

02.

After one week of documenting, dedicate a meeting to sharing out the work that was involved in implementing the collaboratively designed artifact.

03.

Create a summary document of resources required, including time (e.g. time required to prepare, implement, build and maintain necessary relationships), emotional (e.g. time to process, skills to hold and navigate heavy emotions as a group), and material (e.g. physical resources).

04.

Discuss what infrastructure needs to be designed and maintained to sustain this work.

## Modification Notes

- The team can modify the journal template to meet the needs of their specific project.
- To further address how power shapes in/visibility, the team should identify an artifact/reading that addresses how power is at play. As part of step 3, add a column in the journal for addressing how power shapes in/visibility or the lack thereof in the artifact/reading.



## Facilitator Preparation

### HANDOUTS OR SLIDES

- [Journal template](#)

## Facilitation Tips

Engage in shared readings (see additional readings below) so that the team understands the importance of naming the various resources involved in implementation. Discuss concepts such as emotional labor, attending to the ways that people with different racialized and gendered identities have different relationships to emotional labor.

### Example from the field

In a partnership between a local community organization and education researchers, collaborators worked together to understand the professional practices of community health workers known as *promotoras*. The *promotora* model engages community members as liaisons between the organization and local residents. The initial focus of this research collaboration was to document the practices of the *promotora* model to understand its success. This was important to the organization as they considered training new *promotoras* and scaling the model. The research collaboration was thus oriented around understanding the *promotora* model and co-designing resources that could support a cycle of learning. The following excerpt from Jurow et al. (2016, p. 211) describes how the visible work of the *promotoras* consisted of tending gardens. The less visible — yet fundamental

— work of developing relationships of care with neighborhood residents was often unseen:

*In 2014, Impact's gardens produced 30,000 pounds of fruits and vegetables. The neighborhood now has 300 gardens and a waitlist with over 100 residents who want an Impact garden, which includes an irrigation system, seeds, seedlings, and the support of a promotora throughout the growing and harvesting season. As a result of Impact's success, backyard garden participants will have the option to sell their produce to the city's first community-run food cooperative, for which Impact has secured funding and a physical space in the neighborhood. These efforts have not only increased residents' access to healthy foods, but they have also expanded the broader movement for food access and social justice within the city. Impact is now creating innovative forms of community infra-*



## Example from the field (cont.)

*structure to address the systemic issue of food deserts in a community-generated and beneficial way.*

*These highly visible transformations in the neighborhood are grounded in the less heralded work that the promotoras do to cultivate thriving vegetable gardens and a sense of community among residents. Promotoras design, prepare, and maintain gardens in backyards with residents, some of whom have never grown vegetables and others who have a wealth of experience with farming. The success of the gardens is key to the social relationships that the promotoras have been able to develop with residents. Significantly, it is the promotoras who handle on-the-spot contingencies in the gardens. For instance, when an irrigation hose breaks or tomatoes become infested with a plague, they manage the complaints of irritated garden participants, as one of the promotoras put it, “always with a smile” to represent the goodwill of Impact and its commitment to the neighborhood (see also Hochschild, 1983). Another dimension of the promotoras’ work is that they have come to serve as confidants and advocates for residents. The sustained relationships they have developed with residents through growing vegetables with them, returning season after season, and learning about*

*their lives have given them unique access to the private and the collective experiences of community members. Working across hundreds of gardens, this small team of promotoras has learned about the challenges facing many of the neighborhood’s residents: access to health care, education, legal services, and concerns with addressing and preventing violence against women. The gardening and relational work has been intertwined, and in fact symbiotic, as promotoras’ relationships with community members are rooted in their effectiveness as gardeners. (Jurow et al., 2016, pp. 211)*

Naming the invisible work (emotional, temporal, and physical) of the *promotoras* had critical implications for understanding the success of the model, promoting equity within the organization, building processes by which to sustain the work, as well as for considering what would be involved if the organization were to implement a similar model in other contexts. Before engaging in work to document the different types of labor in which the *promotoras* engaged, the official description of their work was that of tending the gardens. However, via diligent documentation and observation, it became clear that the success of the model, and thus the organization, was due to the less visible work involved in cultivating and responding to the relational and emotional needs of the community.



## Commitments to Equity

“What is seen and what is invisible, to whom and why, helps researchers understand what matters in an organization and whose perspective is valued” (Jurow et al., 2016, p. 218). Making diverse forms of labor visible is critical in generating equity-oriented practices. Articulating the diversity of work entailed within a focal practice can support an “ecological understanding of workplaces, materiality, and interaction” and can surface issues of justice and injustice (Star, 1999, p. 379). All too often, what gets counted as labor is prescribed by white, patriarchal norms. All too often, the emotional labor of care and mentorship falls upon people of color and female-identifying bodies. Obscuring the relational and emotional

labor that is critical to the success of particular practices puts an undue burden on team members of non-dominant identity statuses, while simultaneously resulting in practices of compensation that do not account for this work.

Clearly defining the work involved in sustaining focal practices and projects allows for the appropriate allocation of resources, potentially minimizing the risk for undue stress caused by unanticipated challenges of implementation. Having a clear understanding of the work involved in implementing and sustaining particular practices and forms of participation can support the generation of structural systems that can support the promotion of the wellbeing for all team members.



# Additional Reading

- Ahn, J., Van Steenis, E., & Penuel, W. R. (in press). Centering work to organize community-engaged research. In D. Peurach, J. Russell, L. Cohen-Vogel, W. R. Penuel, & D. Eddy-Spicer, (Eds.), *Handbook of improvement research in education*. Routledge.
- Marin, A., Stewart-Ambo, T., McDaid-Morgan, N., White Eyes, R., & Bang, M. (2020). Enacting relationships of kinship and care in educational and research settings. In A. I. Ali & T. McCarty (Eds.), *Critical youth research in education: Methodologies and praxis* (pp. 243-264). Routledge.
- Orr, J. E., & Crowfoot, N. C. (1992). *Design by Anecdote -The use of ethnography to guide the application of technology to practice*. PDC.
- Orr, J. E. (1990). Sharing knowledge, celebrating identity: War stories and community memory in a service culture. In D. Middleton & D. Edwards (Eds.), *Collective remembering: Memory in society* (pp. 169-189). Sage.
- Penuel, W. R. (2019) Infrastructuring as a practice of design-based research for supporting and studying equitable implementation and sustainability of innovations. *Journal of the Learning Sciences*, 28(4-5), 659-677.
- Star, S. L., & Strauss, A. (1999). Layers of silence, arenas of voice: The ecology of visible and invisible work. *Computer Supported Cooperative Work (CSCW)*, 8(1-2), 9-30.

# Works Cited

- Jurow, A. S., Teeters, L., Shea, M., & Van Steenis, E. (2016). Extending the consequentiality of “invisible work” in the food justice movement. *Cognition and Instruction*, 34(3), 210-221.
- Star, S. L. (1999). The ethnography of infrastructure. *The American Behavioral Scientist (Beverly Hills)*, 43(3), 377-391.
- Strauss, A. (1985). Work and the division of labor. *Sociological Quarterly*, 26(1), 1-19.
- Suchman, L. (1995). Making work visible. *Communications of the ACM*, 38(9), 56-64.

