



Design for America: Organizing for Civic Innovation

Insights

- Process, community, and mentorship are core to the success of civic innovators.
- Let empathy with the local community drive civic innovation.

When we think about civic innovation, we tend to focus on the technology that improves our communities: maps for reporting violence, microblogging for flood victims, and online tutoring for reading. But these innovations do not just appear. They are the products of people who work day to day to identify meaningful problems and implement creative solutions to better our daily lives. To ensure our social welfare, industry and government depend on higher education to play a pivotal role in preparing these much-needed civic innovators. Yet students learn best through practice, and opportunities for

relevant practice are limited in higher education. I set out to change this.

I created Design for America (DFA)—a national organization that connects and activates voluntary teams of university students, faculty, professional designers, and community members to confront illiteracy, tackle violence, beat poverty, and more. DFA guides student-led teams as they learn and lead a community-centered innovation process that emphasizes participatory design, rapid iteration, and interdisciplinary teamwork. Outside the classroom, yet still within the resource-rich university environment, the teams

work until their solutions are implemented in their communities.

In the course of working with hundreds of students, faculty, professionals, and community members to build this new learning organization, I developed and refined three core organizational design principles concerning the role of process, community, and mentorship.

This is what worked.

THE PROCESS PRINCIPLE

While in the hospital recovering from a collapsed lung, a physics major and DFA member named Yuri Malina was startled to learn that every year more than 100,000 people in the U.S. die from infections they get while in the hospital. That infection rate would plummet if only nurses and doctors reliably washed their hands—so why weren't they doing it? After spending days and nights hanging out in the hospital observing, as DFA taught them to do, Yuri and his teammates Casey, Hannah, and Mert realized that it was not that doctors didn't want to wash their hands; rather, it wasn't convenient to use the hand sanitizer stationed by the door. They needed a way to sanitize their hands that was as instinctive as wiping their hands on their pants, the way a kid would to get sand off his hands at the beach.

Yuri and his team followed DFA's guided innovation process, which walked them through phases such as understanding the needs of people in their community, generating ideas, and rapidly building and iterating solutions with those people. They met regularly with Jeanne Olson, a professional designer based in Chicago, who volunteered her time to help the team, invited them to brainstorm ideas at her dining room table, and sent them all of the books and articles she could find on the topic. Formally trained as engineers and psychologists, the team reached out for additional support from medical experts at Northwestern University who were familiar with hospital-acquired illnesses. After several years of work testing and refining their insights, they came up with an innovative solution that makes it easy to sanitize hands and remotely track compliance throughout the hospital. Swipesense is a portable hand sanitizer that allows health professionals to wash their hands at the point of care and provides real-time feedback to reward good behavior.

Yuri and his team have raised over \$1 million from investors, completed clinical trials at Northwestern Memorial Hospital resulting in a 64 percent increase in hand hygiene, and will have shipped 3,000 units to 10 hospitals by the end of 2014.

Rather than giving the teams "neatly structured problems on platters," as a team member put it, DFA starts by teaching teams to identify problems in their own community that are personally meaningful to them and if solved, could scale globally. DFA teams go out into the community to talk to people to understand what isn't working and what could be working better. They talk with community members to get a sense of the pressing challenges, take digital pictures of what's broken, and do research to learn about the significance of the problems and which problems resonate personally with them. In Yuri's case, while he realized the importance of hand hygiene in his local hospital, in reading the Centers for Disease Control and Prevention's online reports, he quickly learned that the problem was not limited to his community. He worked locally to understand the problem and develop the solution, with the possibility that the solution could scale. Unlike other innovation processes that begin with a technology in search of an application or a marketing plan, DFA's civic innovation process begins with developing sensitivity and insight into the needs of the community and the grand, complex, and often messy challenges of society.

COMMUNITY PRINCIPLE

To train and mobilize civic innovators to spend thousands of hours volunteering, DFA invites anyone who wants to be part of the organization to join. The only requirement is that participants must develop, test, and implement the ideas, not just discuss the enormity of the problems. As a DFA designer says, "We don't just talk about ideas—we bring the ideas off sticky notes and into reality." DFA shows that it's not enough to identify the solution, nor is it enough to generate brainstorm solutions: Teams need to implement solutions that will impact people's everyday lives.

In addition to reinforcing the implementation of ideas, the community fosters interdisciplinary perspectives critical for civic innovation. DFA has a network of more than 2,500 people



coming from more than 40 different disciplines including computer science, psychology, and business. As such, DFA team members have a unique opportunity to work with others beyond their own disciplines. Not only does the interdisciplinary community lead to more innovative solutions, but also the diversity of the community inspires learning about new disciplines. The network provides the foundation for DFA's civic innovation studios, currently hosted at 17 universities across the country. By hosting the studios at universities, DFA attracts students with a passion for innovation and impact who are poised to take advantage of the broad range of expertise on campus and who can access workshops and labs to prototype and test their ideas.

Consider the experience of Hannah Chung, a mechanical engineering



student, who had both a family history of diabetes and an interest in child welfare. When hanging out with Angelo, an eight-year-old diabetic, she was surprised to learn that he pricks himself up to eight times a day to manage his chronic illness, and that if he doesn't pay careful attention to his health, it can result in a visit to the emergency room. She and her team brainstormed many solutions to help Angelo; they shared their ideas with medical experts, kids, and parents and ultimately created an interactive robotic teddy bear, Jerry the Bear, to teach kids how to count their carbs, identify symptoms, and learn how to respond to hypoglycemic events. Not formally trained as programmers or game designers, the team put out a call to the DFA network for help. Expert roboticist Michael Peshkin responded enthusiastically, because he had both the

technical skills and a passion for civic engagement. He encouraged them to use the 3D printer at their university to make the housing for the electronics. In doing so, the team was able to tap into the interdisciplinary DFA network to learn a new skill central to their solution and tap into campus resources to build their first prototype. After learning how to program, Hannah and her team offered to teach their new skills to the DFA network. While the team could have taken a semester-long class in programming or learned skills through online courses, they were not interested in the invented problems, such as sorting an array of phone directory records, often used to teach those skills; nor were they interested in learning the skills in the context of another domain.

To get the work done, DFA teams meet weekly with each other and

monthly with university faculty and professional mentors from their area, who include professional computer scientists, engineers, entrepreneurs, doctors, hospital administrators, biologists, and city planners. In these meetings, they share two critical things: inspirational stories and failed attempts. The inspirational stories are ones of success and accomplishment toward meeting their goal. In the case of Hannah and her team, they involved showcasing their prototype bear to a child, who liked it so much that he wanted to take it home with him. Such successes publicly reinforce their commitment to doing the difficult work often required of civic innovation. But perhaps more important, DFA teams share stories of failure. After building the first working prototype, Hannah and her team showed the



Swipesense, developed by DFA member Yuri Malina and his teammates, increases hygiene in hospitals by allowing health professionals to wash their hands at the point of care. (photo: Northwestern Memorial Hospital)

bear to a physician with expertise in diabetes, who promptly told them that the product had been made before and failed to gain traction in the marketplace. The other teams who were not directly working on the project supported reflection on both the successes and failures, helping the team to gain motivation from the successes and learn from the failures.

DFA encourages teams to broadcast the stories and reflections to the national DFA network so that everyone can learn from each particular case and integrate that learning into their own work. DFA teams report that learning from others—specifically the failed attempts of others—gives them the confidence to get back up and try again rather than spend energy trying to cover up the failed attempt. Whether passionate about the environment and reducing water waste in Nashville or improving transportation safety for older adults in New York, the DFA network provides a safe environment for learning and reflection. If we want civic innovators who can stop deadly pandemics, solve the energy and climate crises, and tackle world hunger and poverty, they have to be prepared to take risks and persist in the face of

failure, over and over. More important, they need to learn how to learn through trial and error. DFA invites members to tackle problems they didn't already know the answer to, and requires them to share both their successes and failures along the way. By doing so, DFA helps students foster the critical skills necessary for civic innovation.

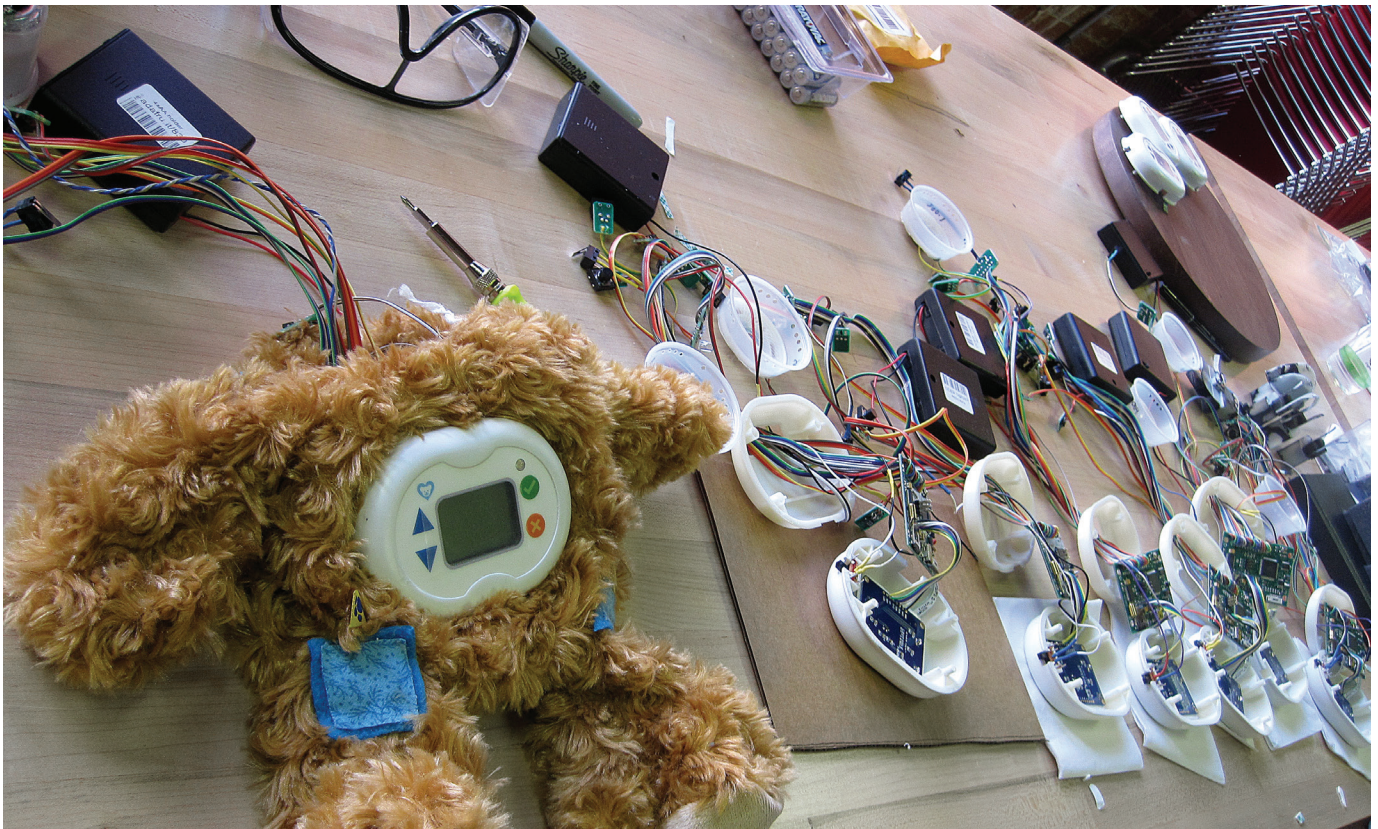
MENTORSHIP PRINCIPLE

To do what is described here, mentorship is critical. Mentorship begins with empathy. DFA mentors understand what is takes to tackle big problems and how to work within a community to solve them, and they share personal experiences with the DFA teams.

Consider Sara Aye, a professional designer in DFA's network who mentors a team focused on reducing childhood obesity. Because Sara knows the initial challenge of identifying and scoping a meaningful project, she initially joined her team during their visits to elementary schools and nearby corner stores to help the team better understand how daily routines and context influence what kids eat. Through examples from her own professional practice, she helped them refine their challenge to focus

on how to provide children with their own shopping experience and reward healthy choices. As the team tested new concepts with kids and parents in the neighborhood, she helped them to learn from the skeptics who thought the problem was intractable, and feel encouraged by the supporters.

To mentor the DFA team, Sara empathizes with the team by recognizing that civic innovation is often not an easy process. She shares specific experiences gained from her own professional practice, such as how she pulled together a team of transit authority employees, transit map designers, and commuters to generate a new transportation app, how they failed to raise funds from their community to build it, and how this failed attempt inspired them to try a new approach. As a DFA mentor, Sara recognizes that to get to where they are, many of the students have been on a "winning streak," earning top awards and recognition with ease, and that failures, if they have occurred, have been carefully hidden to preserve reputations. She shares the reality of civic innovation—the highs and lows—by inviting her DFA team into her studio to see how innovation really happens.



Jerry the Bear, shown here during assembly, was developed by DFA member Hannah Chung and her teammates. It teaches children with type 1 diabetes how to manage their blood glucose levels, recognize their symptoms, and maintain a healthy diet. (photo: Sproutel, Inc.)

CONCLUSION

Five years ago, I wondered if we could motivate and mobilize student-led teams to work with faculty and community members to understand and develop solutions to seemingly intractable problems in their local communities. I wondered if we could activate a volunteer network to inspire civic innovation at campuses across the country. And I wondered if we could answer industry's and government's call to cultivate future civic innovators.

The answer is yes.

During this time, not only have we realized DFA as a proven way to cultivate civic innovators, but there has also been a growing number of complementary yet distinct university initiatives including project-based courses [1], research labs [2], social innovation competitions [3], and civic hackathons [4]. Like project-based courses, DFA provides instruction to students; however, in DFA the learning is student driven rather than instructor led, which has been shown to influence motivation and mastery. Further, unlike courses, DFA teams are supported both locally and nationally, extending the amount of community support. Like research labs, DFA teams

have mixed expertise; however, DFA prioritizes learning and impact over research. And like civic hackathons and social innovation competitions, DFA is not constrained by the academic semester. DFA, however, guides teams over extended periods as they identify a meaningful problem and implement solutions to complex social challenges, which hackathons and competitions rarely do.

While the growing number of university initiatives bode well for our social well-being, these initiatives require extensive human involvement. At DFA, I work with one colleague, one full-time staffer, and three recent graduate fellows to support the thousands of members in our network. The fellows travel from studio to studio to work with students, faculty, professional mentors, and community partners. And so we are faced with another design challenge: How can we sustainably scale this fundamentally human process? Technology can help, but civic innovation demands extensive human involvement within these communities and mentoring within and across teams. We are looking to the

growing and committed DFA alumni to actively cultivate the next young, excited students to be the innovators we need. Because without this experience, we risk students graduating from university unprepared to tackle complex social challenges.

So let's remember: Poverty. Obesity. Illiteracy. Crime. Unemployment. Pollution. These problems are not going to solve themselves. No, we need to train, mentor, and inspire the next generation of innovators to solve them. Together.

ENDNOTES

1. <http://blogs.ischool.berkeley.edu/ict4se/>
2. <http://publicpractic.org>
3. <http://www.dellchallenge.org/>
4. <http://carldisalvo.com/posts/issue-oriented-hackathons/>

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