Bay Area Discovery Museum: Solving Old Problems in New Ways During the 100Kin10 Fellowship

https://100kin10.org/news/bay-area-discovery-museum-solving-old-problems-in-new-ways-during-the-100kin10-fellowship

Picture a Mobile Engineering Lab traveling across California, reaching thousands of kids in schools, libraries, science fairs and parks. When it starts rolling in 2017, this Mobile Lab from the Bay Area Discovery Museum (Museum) will be traveling across the city—delivering tools that teachers desperately need to begin teaching engineering in early years.

If not for the 100Kin10 Fellowship program, the Mobile Engineering Lab would not have been conceived.

The 2015 Fellowship program was designed to to create a community of problem-solvers focused on finding new ways to bring engineering education to K-12 classrooms across the country. This yearly initiative is a rigorous collaborative six-month collaborative learning experience whereby partner teams work elbow-to elbow with other STEM leaders, peers, and experts at three in-person events, receiving virtual coaching between events. At the end, partners submit competing applications for funding through the 100Kin10 Challenge Grant.

When the Museum team arrived in New York City for the first in-person Fellowship meeting, they weren't even thinking of a Mobile Lab. They had a completely different idea in mind. Irina Thompson of the Museum loved that 100Kin10's "flipped funding" model "required them to start with collaborative development work before coming up with a competitive proposal rather than submitting a proposal, rather blindly, then having the discussion after the fact."

"It's amazing to be part of an organization like 100Kin10 that is coming up with some pretty cool solutions for how to bring more innovation into what is often a very slow moving field."

To start, 100Kin10 asked teams to put any preconceived ideas "on the back burner," because initial solutions don't often focus on root causes and lack the crucial element of user input. Instead, the 11 teams spent two days brainstorming, digging deeply into the question: "Where are the barriers to having high quality engineering teaching in our schools?"

The Museum's Elizabeth Rood says this exploratory questioning process helped their team identify two roots causes of the problem. First, people (teachers included) don't really understand what engineers do: "it's hard to think beyond building a bridge." Second, the Museum is located within a park and is not that easy to get to.

From these two insights came a new solution: "What if we had a mobile engineering lab that doubled as a billboard as it's driving through the community while introducing teachers to the

types of engineering they can do with little kids that is developmentally appropriate but also helps build the skills and the thinking that they ultimately need."

The Museum team went home armed with targeted homework and plans to test with the ultimate program participants and users**.** They surveyed teachers using a slide show—visuals helped the busy teachers focus - and the teachers loved it! Their extensive testing and the collaborative work guided by the 100Kin10 team helped the Museum team develop and refine their new idea into a working concept over the intervening months.

In September, the Museum team returned to New York to present their prototype for feedback in the form of a "practice pitch." Rood admitted: "It was very intimidating initially because you have some really high caliber folks in the room from the US Department of Education, to venture capitalists, funders, 100Kin10, staff… an entire conference table full of these folks."

The Museum team's initial pitch was too broad, and the experts encouraged them to be more intentional about their audience and scope, asking: "What's the unit of change in there—are you trying to change kids, are you trying to change teachers, or are you trying to change the schools? Where is it?"

The questioning worked. Their final proposal incorporated the feedback, and the project was awarded a $380,000 grant from

"We didn't have to have it all answered before we came to them with our ideas. It's difficult for nonprofits to 'sell innovation', as few funders want to fund an untested idea. I think 100Kin10 knows that to really shift education in a fundamental way you have to create space for experimentation."

And what would the Museum team advise future fellows?

"Just jump in and do it. Don't worry about being perfect. The Fellowship is intense, but worth it. You get back what you put in."