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Perspectives about Design Education for Social Innovation: the Safe Agua Case Study.

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Abstract

Water is one of the scarcest and most precious natural resources on earth. In our interlinked economies, access to safe water in one community quickly becomes a global issue that affects us all. Experts forecast that by 2030 demand for water is expected to be 50% higher than today, and withdrawals could exceed natural renewal by 60%, making water scarcity an even more dire reality for a third of the world's population.

The authors of this paper, both educators in one of the most prominent art and design colleges based in the US, present a social impact design project they have helped develop which focuses on meeting the challenges of safe water access for populations of urban slum dwellers in Chile and Peru. The paper provides insight about multidisciplinary design research and co-creation methods with end users and the NGO project partner in both countries. It also includes an analysis and discussion about the field-testing and pilot rollout of the innovative product solutions that resulted from the collaboration. Highlights about the opportunities and challenges inherent to designing with communities across cultures for social innovation and scale are central to the takeaways from the case study presented.

KEYWORDS: social innovation, safe water access, user-centered design research, co-creation, social design, products and services for the base of the pyramid.

Introduction

"Nothing has to be or to remain as it is or as it appears to be; there are no limits to the conceivable." —Horst W.J. Rittel, *The Reasoning of Designers*, 1987.

There is a revolutionary transformation underway in the design field at large as it continues to expand its meaning, shape human experience and influence other knowledge domains and contemporary culture at a broader scope than at any time in the past. In their most essential roles, designers today deal with concrete and objective results whose consequences affect us all, shaping the form,

function and symbols of our world: from the visualization, ideation and planning of images, products and services to the strategic conceptualization of systems and environments. (Buchanan, 1994)

Increasingly, as well, designers are called upon as translators and synthesizers of a class of societal challenges that are ill defined, ill structured, and "wicked." (Rittel and Webber, 1973)

This paper offers an in-depth overview and articulation of the evolving pedagogical methods and design outcomes of Safe Agua, a flagship initiative facilitated by Designmatters at Art Center College of Design. Safe Agua focuses on meeting the challenges of safe water access for populations of urban slum dwellers in Chile and Peru and is the result of an ongoing partnership between Designmatters and the Innovation Center of the NGO Un Techo Para Mi Pais, headquartered in Santiago, Chile.

In the context of the analysis of the Safe Agua case study, this paper also poses some consequential questions about the opportunities and challenges inherent in crafting new pedagogical models for design education that aspire to social innovation outcomes.

A Journey Beyond The Studio:

An Overview Of Safe Agua Chile & Peru

Clean water is essential to life; lack of access to it results in poor health and economic hardship. In our interlinked economies, access to safe water in one community quickly becomes a global issue that affects us all. Experts forecast that by 2030 demand for water is expected to be 50% higher than today, and withdrawals could exceed natural renewal by 60%, making water scarcity an even more dire reality for a third of the world's population. (Water Resources Group, 2009)

Over two academic terms in 2009, the Designmatters Department at Art Center College of Design partnered with the Innovation Center of the Chilean organization Un Techo Para Mi Pais, which has offices in 19 countries throughout Latin America, to sponsor studios in which undergraduate students traveled to Chilean slums and worked directly with residents to envision, design and test solutions addressing the lack of safe running water. For residents of Fundo San Jose, in the outskirts of Santiago, Chile, the team, calling itself Safe Agua Chile, generated six solutions involving the use, storage and transportation of water.

In 2011, the same staff and faculty leadership team extended the Safe Agua project to a Peruvian slum with key support of a Sustainable Vision grant from the National Collegiate Inventors and Innovators Alliance (NCIIA). The Safe Agua Peru team sought opportunities for water system innovations, capitalizing on the field research and outcomes of the Chilean project. The Peru project included a new studio class of students from the undergraduate Environmental, Product, and Graphic Design



departments in an advanced-level transdisciplinary studio hosted by the Environmental Design Department at Art Center. A Graduate Broadcast Cinema student was also enrolled in the project to produce a documentary about the collaboration.

The project began in September 2011 with a 10-day intensive field research trip to Cerro Verde, a community perched high in the hills of Lima with no access to basic services. This community was identified with the team of Un Techo Para Mi País Peru, in Lima, and the Techo Innovation team based in Santiago (Figure 1). Driven by field research and continuous dialogue with a cluster of approximately 20 families from Cerro who agreed to participate in the studio, teams designed a series of proposed products and systems to address water scarcity. They created full-scale working prototypes, which were tested in Peru, then further iterated upon and refined based on several loops of feedback with the community of end users and partners in Peru.

Six Proposals

By the end of the studio's full academic term in December 2011 (16 weeks into the project), and based on lessons learned from testing and user feedback, the Safe Agua Peru teams developed designs that aspire to enhance benefits and functionality for users (including health benefits, convenience and water-savings; user experience; educational value; and appeal to kids) while targeting affordability and potential for local manufacturing and effective distribution. The following six working prototypes were proposed:

- *GiraDora*, designed by Ji A You and Alex Cabunoc (figure 2) is an innovative concept for a human-powered combined washer and spin dryer for families earning \$4 to \$10 (US) a day. Currently, hand-washing clothes is a time-intensive chore that takes up to 20 hours a week, consumes much of families' scarce water, and can lead to health risks. *GiraDora* reduces the time to hand wash a load of laundry from one hour to three-to-five minutes, uses a third less water, and improves the experience of hand-washing clothes for women living without access to running water. The user sits on the drum-like appliance and pumps the pedal with her foot to agitate, clean, rinse and then spin-dry clothes. Local assembly and an innovative business plan with three revenue streams for micro-entrepreneurs provide supplemental income. At a price point currently under \$40 (US), *GiraDora*'s comfortable and ergonomic operation significantly increases productivity, reduces health risks, instills dignity and affords opportunities to begin breaking the poverty cycle.

- *Balde a Balde* (Spanish for "Bucket to Bucket"), designed by Kim Chow (figure 3) is a portable faucet that delivers a flow of water from any container. Lack of running water is associated with a decreased incidence of hand-washing and an increased risk of diarrhea—one of the leading causes of death for children under five globally.

Balde a Balde makes the convenience and health benefits of running water available to families among the two-in-10 urban dwellers, and seven-in-10 rural dwellers who lack access to piped water connections. (WHO/ UNICEF Joint Monitoring Programme for Water Supply and Sanitation report, 2010) Unlike other hand-washing interventions, *Balde a Balde* addresses not just clean hands, but optimizes the full range of water-related tasks performed in the home. *Balde a Balde* provides running water wherever it is needed: a universal clip attaches the portable faucet to any existing container; a squeeze of the siphon pump initiates a continuous flow of water; tapping the spout instantly turns on and off the water; twisting the valve regulates the volume of water.

- *VitAmigos*, conceived by Cora Neil and Thomas Kong (figure 4), proposes a new, fun, playful and interactive experience for mothers and children that combines water purification and nutrition in a tasty beverage. For families living without access to safe water, *VitAmigos* seeks to reduce waterborne illness and improve kids' health for less than the cost of a soda. *VitAmigos* is not just a vitamin-enriched water; it also provides an educational experience for children. Comprised of a playful and durable clear pitcher and time-release tablets, it works in phases: first the tablet purifies the non-potable water, then it dissolves to create a vitamin-rich beverage, with a fun color that indicates it is safe and ready to drink.

- *Clean+Smart*, designed by Mariana Prieto and Alexandra Yee, uses small detergent packages as the vehicle to deliver ADI educational toys to children living in extreme poverty. Detergent is a commodity that is purchased very frequently in small packages throughout slums in Latin America. *Clean+Smart* gives families with children a low-cost opportunity to collect high quality toys that can support their children's development from the home (figure 5).

- *Caja del Tesoro*, designed by Seth Weissman and Viirj Kan, is an analog vending machine and micro-business initiative that gives women living at the base of the pyramid the skills and tools necessary to help them earn their way out of poverty. The stand-alone storefront adjusts to vend a range of products, providing a convenient, safe and accessible place for slum communities to purchase necessities anytime during the day or night. The concept includes an entrepreneurship program to empower women to generate income for their families, while providing value for their communities (figure 6).

- *Soap Buddy*, designed by Carlos Vides, is a soap-dispensing bracelet for kids that intends to promote hand-washing by making soap more accessible and fun. Hand-washing is critical to preventing diarrheal illnesses, and can reduce twice as many water-related deaths as clean drinking water alone. (charitywater.org, 2012) *Soap Buddy* makes hand-washing fun by extruding paste soap (common in developing countries) though the bracelet's faceplate. The interchangeable



faceplates become animated when the soap is extruded: Spiderman shoots out a soap web, Hello Kitty's whiskers grow, soapy boogers ooze out of a nose, or roses grow from a stem.

Next Steps

The student teams that have moved forward into a new phase of iteration and development all have in common the fact that their designs resonated strongly with the families they engaged and the project's partner; these teams have also demonstrated entrepreneurship intent in wanting to see their patent-pending prototypes advance to a new phase of development, beyond the studio course, that includes a second round of pilot testing and impact assessment (underway at this writing) in slum communities in Santiago, Chile, closer to the Innovation Center's Chilean headquarters. The Balde a Balde and GiraDora teams are currently working with a team of faculty and students from the Society and Business Lab at the University of Southern California Marshall School of Business; Clean+Smart are pursuing commercialization strategies, and VitAmigos is collaborating in turn with chemistry experts from the California Institute of Technology to research water purification technologies appropriate to their design system.

A further stage of testing in both Peru and Chile is anticipated in 2013 for these projects based on the local support and social enterprise network of the Techo Innovation team, and a number of pending NCIIA "E-Team grants" for which Balde a Balde and GiraDora are under consideration; this is key support—NCIIA makes awards to multidisciplinary teams of students and faculty to bring to market promising innovations.

The Design Challenge & Framework Criteria

The Safe Agua studio posed the following design challenge: "How can we work with families living in Peru's asentamientos (slums) to design and develop solutions, products and services for using, obtaining, containing and carrying water in order to help break the cycle of poverty?" This challenge was framed with a market-based approach, guided by the social entrepreneurship thought leader C. K. Prahalad:

"If we stop thinking of the poor as victims...and start recognizing them as resilient and creative entrepreneurs and value-conscious consumers, a whole new world of opportunity can open up. Four billion poor can be the engine of the next round of global trade and prosperity. They can be a source of innovations." (Prahalad, 2004)

Design criteria were established through the lens of social entrepreneur Paul Polak's book *Out of Poverty* (2009), as well as Polak's teachings at a NCIIA workshop attended by the Product Design lead faculty of the project. Polak's charge, to "Make sure your approach has positive measurable impacts that can be brought to scale. Make sure it can reach at least a million people and make their lives measurably better," (Polak, 2008) along with joint goals established between the Art Center Designmatters/faculty

team with the Innovation team at Techo. Key drivers were outlined as follows:

- *Scalable, sustainable solutions with potential for real-world implementation;*
- *Radically affordable products and services for Base of the Pyramid;*
- *Solutions that address specific problems, with both quantitative impacts (illness reduction, water conservation, increased time for self-improvement, opportunities to generate income) and qualitative impacts (sense of dignity);*
- *Solutions at the scales of: products for individuals & households; products, spaces and services for a small group of families (which can in turn benefit a larger group) along with services for many communities.*

To guide students in integrating these criteria from the outset, the teaching team expanded beyond the Environmental and Product Design faculty who previously led Safe Agua Chile. To achieve deeper field research results, an ethnography instructor collaborated on framing the field research methodologies and co-led the field research trip. During the term, the instructor continued to lead a co-requisite ethnography seminar embedded in the design studio to articulate problems, construct compelling stories and contextualize the studio work with discussion and readings on poverty, slums, the role of water, social innovation and Base of the Pyramid (BoP) entrepreneurship case studies. Additionally, the class integrated workshops, lectures and consultation by a business Teaching Assistant, a University of Southern California Marshall School of Business MBA Candidate and Society and Business Lab Fellow. As the projects progressed, the business TA guided teams through the process of framing business models, using tools from *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. Field Research and Designery Ways of Knowing

The following section provides an overview of the key design research strategies and exercises for immersive learning that were used in the Safe Agua studio. Many of the methods articulated were greatly informed by methods deployed in the previously led-studio, Safe Agua Chile; and others were co-developed with the design research ethnography expertise as referenced above. This integration of academic and studio instruction is an important hallmark of all transdisciplinary studios at Art Center and proves increasingly essential to support the accelerated pace of learning that projects such as Safe Agua demand.

Exercise In Empathy: A Day Without Taps

Successful design is rooted in empathy. To prepare for the research trip, "A Day Without Taps" was an effective exercise that visualized a measure of constraints the students would encounter in the field. Each student and faculty member purchased five gallons of water to use for all daily activities for one day, carried it home on foot, bike



or public transit, and boiled their drinking water. The goal of this exercise was to become conscious of how we use water in our daily lives and to dedicate one day to understanding how our lives would be different without convenient access to water. This exercise built empathy with the families the team worked with in Cerro Verde, who purchase non-potable water from a delivery truck, for 14 times the cost-per-gallon that Lima's middle class city-dwellers pay, store water in barrels along the dirt road, and hand-carry water up hundreds of hillside steps.

The Field Research Trip

Development of Safe Agua Peru began with a 10-day intensive research trip to Cerro Verde. Two core families hosted each research team of two students, with a total of 20 in-depth interviews conducted collectively. During the visits, the teams participated in daily activities and helped with daily chores, gathered quantitative data, discussed people's aspirations and life stories, and bonded with families. At Techo's office in Peru, to prepare for working with families in the field, the teams conducted a role-playing exercise to practice interviews with a translator, developed interview questions, and met with Cerro Verde's two community leaders.

Methodologies

A set of methodology cards (figure 7), which built on those developed for Safe Agua Chile, guided ethnographic research methods to collect both quantitative and qualitative information. The cards were intended as a generative starting point for gaining insights into another culture, rather than a prescriptive method. They outlined seven areas of focus, three specifically related to water and four broad topics beyond water. The cards were designed based in part on the collective experience of the faculty, as well as inspiration from IDEO's method cards (IDEO Method Cards, 2003), to help overcome language and cultural barriers, with methodologies targeted to each topic:

- Day in the Life: Suggested methodologies included timelines and giving inexpensive digital cameras to the family members to keep and narrate a photo journal of their daily life. Quantitative questions included budgets, earnings and time spent on work, family and chores.
- Aspirations/Limitations: Methodologies included card sorting. Qualitative questions included what steps people are taking to achieve their dreams and goals, and what larger structures (policy, class issues) might prevent people from achieving them. The findings from this card—that people's highest aspirations were for their children to succeed, as well as to own their own house and earn more income—drove the larger missions of each team well beyond water.
- Materials & Making: Methodologies included gathering existing individual and local skill sets, and innovative solutions that people have created. Questions included asking people what objects are missing from their lives in order for them to perform daily tasks.
- Maps & Networks: Methodologies included drawing an ideal home layout, mapping paths people take to perform water-related actions.
- Obtain/Contain Water: Methodologies included guided tours, and tracing water back to its source, identifying at which points contaminants are introduced, money exchanges hands, and municipalities, companies and broader policies are involved.
- Carry/Move: Methodologies included flow analysis and storyboarding the path that water takes. Key questions included, "How can minimizing carrying and moving water impact people's health and afford free time for self-improvement activities?"
- Use/Reuse Water: Methodologies included participating in daily water-related chores (laundry, dishes, cooking, cleaning home, etc.), then drawing a step-by-step action map of each routine, and asking at what point along each action map do design opportunities lie.

Initial Problem Identification & "What Ifs"

In a first stage post-field immersion, teams mapped their insights, visualizing the various threads of immediate findings with posted notes that were organized under meta-questions: "What's the problem?" and "What If...?" The teams collectively ranked the most pressing problems and returned to the field to ask families to rank their highest priorities, and pose "what-if" scenarios/solutions together. While students often came up with "blue sky," abstract solutions, families tended to gravitate toward pragmatic ideas with concrete steps addressing each problem. To understand the broader framework of each key problem, teams created maps that traced back to root causes, and sketched forward potential implications. A presentation on BoP trends, aspirations, and inclusive business models by Lima-based staff from the Netherlands-founded nonprofit organization SNV, which works worldwide to develop best practices for sustainable development, was key to contextualizing the field research. The SNV Peru-based team of researchers added important data and guidance that was informed by years of research working with BoP communities in Peru.

Design for Social Innovation: the Pedagogical Journey

The Safe Agua studio (figure 8) stands apart from many other studio classes typically present in the Art Center undergraduate curriculum in that students aren't assigned a design brief per se, but instead offered an ill-defined "wicked" problem to wrestle with, and a specific context that grounds it. Faculties mentor the students and guide them through an open-ended process of "opportunity definition" that occurs in the field with end users and partners. In this sense, the design research methodologies that informed the Safe Agua studio, as most Designmatters collaborations, follow a long lineage of participatory design research modes of engagement. Participatory design is widely recognized today as offering important advantages



to a design team that can draw upon the tacit knowledge of users to identify issues and solutions that may otherwise elude them. (Press, 2003) In designing for a specific group or context, users may also gain a sense of “ownership” about the design that can lead for more successful outcomes. In this context, the Safe Agua project approach epitomizes a project that engages designers, principles of design thinking, co-creation and participatory design to place people at the center of the design exploration and process—beyond reducing them to “end users.” (Buchanan, 2001)

The participatory arc of the project continued well past the field research immersion. The teams took initial findings and began to analyze and synthesize the data to define key problems. To ensure that framing occurred within a dialectic process that asked questions of relevance, and that—importantly—would maximize the chances for proposed products that the families would be eager and able to purchase, the teams sought opportunities that connected with both observed behavioral patterns and consumption patterns (i.e. cost, time, and health). Teams also identified market opportunities with the potential of broad-based impact (the ideal target scale of beneficiaries was held at the one million-plus mark).

Co-Creation

In response to a critique from Techo that Safe Agua Chile did not fully achieve a true process of co-creation, the team sought more meaningful connections between students and families throughout the Peru project, beyond the field research stage. Tactics used for ongoing dialogue that would lead to co-created “opportunity definition spaces” the team consulted regularly via Skype with the Techo team, and with the families in the study via Nextel phones. In the next step of validating initial design directions, design teams emailed “co-creation” documents (including a clear problem statement and storyboard, drawings of three potential solutions, and specific questions) for the Techo team to use as a tool to elicit feedback from Cerro Verde families. These regular feedback loops during prototype development continued to dictate the direction of the design development.

Iterative Prototyping

The objective of the prototyping phase was to develop design solutions that respond to the opportunities identified, via a process of brainstorming and sketching, storytelling, and building iterative prototypes. Inspired by Paul Polak, this quick prototyping focused on the premise of developing “tools for empowerment” rather than dead-end objects. (Polak, 2011)

A “Thinking through Making” exercise transitioned from problem definition phase to iterative prototyping phase. The goal of the exercise was to begin to make rough ‘proof-of-concept’ prototypes to ideate off the page, through making and hands-on exploration.

After initial rounds of design exploration, all teams created

working prototypes for midterm presentations. Two weeks after midterm, two student representatives—a bilingual product design student and the graduate broadcast media documentary filmmaker—brought all the prototypes to Peru for field-testing. We timed the field-testing to give students a meaningful deadline to make a big leap forward after midterm, and then receive feedback with four-to-five weeks to implement into final designs. With key support from Techo, the students tested the teams’ working prototypes in Cerro Verde with five families, for four days, and left robust prototypes with families for longer-term trials. The student researchers also conducted focus group discussions and surveys with larger groups of women, and visited a local school. The families in Peru responded to these working prototypes, shared their own ideas, and showed us exactly what they valued and what they wanted to change. Back in California, the research team downloaded their field notes and shared documentary footage of interviews and product testing with each team. This direct interaction with end users afforded insights that drove the designs, and in some cases fundamentally shifted a team’s design direction. For instance, Team GiraDora sent two separate prototypes: a plunger-like washing device and a salad-spinner inspired dryer. Immediately, the women of Cerro Verde identified the highest value in combining the washing and drying prototypes into a single device, which dictated team’s final design direction.

Lessons learned from Safe Agua Chile drove the decision to allocate limited resources to a second field trip—which had not occurred for Safe Agua Chile. Safe Agua Peru instead allowed for feedback during field-testing at a critical juncture of the studio (midterm) and having access to this feedback that the two students assigned to go back to Peru brought back, yielded a unique educational experience for entire class. The salient values proposed by the final designs, i.e. benefits to users, including health, convenience, water-savings, user experience and educational value, are a direct outcome of those closer interactions between the design team and the families.

Beyond the initial studio: project development toward pilot testing

In Spring 2012, a new course in the Art Center curriculum, the Designmatters Development Seminar, was created to ensure that faculty mentorship and resources would be available to support the student teams who had expressed interest in continuing development on their design innovations. Safe Agua Peru’s VitAmigos, Balde a Balde, GiraDora, and Clean+Smart teams have developed their prototypes and incubated business strategies. The teams have explored human-centered/participatory design research methodologies and user testing; employed rapid prototyping, collaboration and innovation techniques; practiced project management and leadership; and gained a broad exposure to resources for developing implementation scenarios through access to outside partnerships and grants that will carry these innovations to a new amplified pilot testing phase in 2013. It is anticipated that in this phase the teams will have to conquer a number of challenges



inherent to pilot rollout of social innovation proposals including: 1) the identification of a local social entrepreneur or implementation partner that may have the potential to accelerate the rate of testing and finalization for the projects to move forward to an amplified scale of pilot rollout; and 2) the design of appropriate distribution pathways and commercialization strategies for each project.

Conclusion

The Safe Agua Peru case study presents an example of an immersive design education model for social innovation that required a rigorous process of collaboration with local partners and end users, field research, methodologies of co-creation, iterative prototyping, field-testing and evaluation, and a critical influx of knowledge imparted to the student team outside design (notably in best practices for design research, ethnography and BoP business models and social enterprises). As a continuation of the Safe Agua Chile project and reliant on a strong partnership with the Techo Innovation Center and the same staff/faculty leadership team at Art Center, Safe Agua Peru also demonstrates the value of taking a “building block” incremental approach. With Safe Agua Peru, strong outcomes both for the students involved and the for the social impact promise that several of the projects are demonstrating are unquestionably linked to that measure of increasing knowledge gained over time, iteration and collaboration that the Art Center and Techo Innovation team accrued since the first engagement with Safe Agua Chile in 2009.

Social Innovation applies to a broad spectrum of contexts. To design education, it co-relates closely with putting in place curricula where students can experience and learn about the real and positive impact the systems, strategies, products and services they conceive as designers can afford individuals and groups of people who live in highly resource-constrained environments. Projects such as Safe Agua aspire to make a tangible difference by setting forth new pedagogical models that are characterized by their openness to experimentation and a mode of responsible engagement with collaborators. The “ROI” for advancing the articulation of design as a key contributor to social innovation at large cannot be overestimated.



Figure 1. Participatory Field Research in the Community of Cerro Verde, Lima, Peru.



Figure 2. Techo staff field testing refined GiraDora clothes-washer/spin-dryer prototype by Alex Cabunoc and Ji A You, in campamento near Santiago, Chile.



Figure 3. Balde a Balde portable faucet, by Kim Chow, provides running water from any bucket, to maximize cleanliness while optimizing water use, for people living without basic services. Prototype testing in Cerro Verde, Lima, Peru.



Figure 4. VitAmigos water purification and vitamin tablet, by Cora Neil and Thomas Kong.



Figure 5. Clean+Smart by Alex Yee and Mariana Prieto.



Figure 6. Caja del Tesoro, an analog vending machine and micro-business initiative that gives bottom of the pyramid women skills and tools necessary to earn their way out of poverty, by Viirj Kan & Seth Weissman.

Obtain / Contain

How do people obtain, store and protect water and other objects, food & valuables?
How can we best impact this area?

Obtain / Contain

Suggested Methodologies:

Guided Tour: Ask people if you can accompany them on a guided tour of how they store & contain water, objects, food & valuables.

Trace Water to its Origin: Trace the water back from the truck, to point of origin, to initial source. Identify at which points along the way: contaminants are introduced; money exchanges hands; municipalities, companies & broader policies are involved.

Quantitative Questions:

Aim for measurable answers. Use questions like: "how much do you pay for water & how often," "how far do travel to get water," "how many trips do you make to and from water source," "how many people do you interact with when obtaining your water," "how often does the water truck come."

Qualitative Questions:

How secure do people feel about the certainty of their water supply? Ask people how they feel about their social interactions to obtain water. Are there certain interactions they would rather avoid if they could and why?

Keep in Mind:

Consider differences between storing valuable vs. everyday objects. Also, families may not know if the water is potable or contaminated.

Figure 7. Safe Agua Peru Methodology Cards.



Figure 8 . The Safe Agua Peru Studio/ Visual Map.

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Designmatters at Art Center College of Design is a repeat grantee of The National Collegiate Inventors and Innovators Alliance (NCIIA) whose mission is to support technology innovation and entrepreneurship in universities and colleges to create experiential learning opportunities for students and successful, socially beneficial businesses; for more information see <http://nciia.org>.

The Art Center Safe Agua Peru faculty team is composed of Liliana Becerra (Product Design), Penny Herscovitch and Daniel Gottlieb (Environmental Design), Julka Almiquist (Humanities and Design Sciences Department). Students are: Erik Anderson (Graduate Broadcast Media), Bianca Fuchs (Graphic Design), Viirj Kan, Cora Neil, Carlos Vides, Alexandra Yee, Ji A You (Environmental Design), Kimberly Chow, Alex Robert Cabunoc, Thomas Kong, Mariana Prieto di Colloredo, Seth M Weissman (Product Design). Department Chairs are David Mocarski, Chair, Environmental Design and Karen Hoffman, Chair, Product Design. The Designmatters Department team includes: Co-Founder and Vice President Mariana Amatullo and Director Elisa Ruffino.

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