Technovation Challenge: Teaching High School Girls To Build Mobile Phone Apps & Businesses

San Francisco, United StatesLos Angeles, United States
Angélica Torres

Organization type:
nonprofit/ngo/citizen sector
Project Stage:
Growth
Budget:
$500,000 - $1 million
Website:
http://www.iridescentlearning.org

- Business
- Education
- Girls' development
- Mentorship
- Youth leadership

Project Summary

Elevator Pitch

Concise Summary: Help us pitch this solution! Provide an explanation within 3-4 short sentences.

Technovation Challenge inspires girls and women to see themselves, not just as users of technology, but as creators, inventors, designers, and entrepreneurs in the technology industry.

Problem: What problem is this project trying to address?

Currently, most computer scientists and entrepreneurs are men. Software fields are exploding and yet jobs go unfilled due to a shortage of programmers. In his keynote speech at the National Technovation Challenge event, venture capitalist Ben Horowitz shared a statistical fact: when you educate a girl in the developing world, on average, five people get educated because she will educate at least four other people through the course of her life. The same finding is not true for boys. By educating girls, Technovation transforms the culture of computer science and business to one of cooperation and equal opportunity.

Solution: What is the proposed solution? Please be specific!

Technovation Challenge provides a safe environment for girls and mentors to step out of their comfort zone and take computational, entrepreneurial, and leadership risks. Over the past three years over 800 high-school girls have programmed 125 mobile phone apps and learned how to launch their startups. 94% of these girls now believe that a career in technology is a viable option for them. Technovation uses project-based learning to encourage a whole suite of transferable skills in our students that go far beyond a traditional computer science curriculum. The curriculum has the direct, hands-on application of creating a personally relevant mobile app instead of taking a programming test in a classroom. The interdisciplinary focus on computer science and business teaches girls how to work as part of a team to create something original and relevant. Our model includes high doses of mentoring by women in the high-tech or computer science worlds.

Example: How does it Work

Technovation Challenge consists of a 12-week course in which 8th-12th grade girls around the world learn to create mobile phone apps using App Inventor, a beginner, blocks-based programming language and create a business plan. App Inventor was created at MIT as a way to hook non-
programmers into computer science because it has a “low walls, high ceiling” design. The girls work in teams and are paired with female mentors from the high-tech community, giving the girls strong female role models while also educating and enriching the mentors’ lives (some mentors have been inspired to start their own companies after participating). Girls are also taken on field trips to high-tech companies, such as Google, to give them first-hand knowledge of what a career in computer science is like. Through the online curriculum, girls learn to think like entrepreneurs, generate innovative ideas, do market research, learn about the engineering process, write business models, and validate their ideas. At the end of the program, the teams create videos of their pitches that are judged by a panel of tech and business experts. Regional winners compete in a high-visibility international pitch night in Silicon Valley, which challenges the girls by asking them to communicate their ideas, process, and final product to an audience and panel of experts (just like in the real world). The entire curriculum, including lessons, tutorials, and video interviews with exceptional women from the high-tech and start-up world, will be posted on the website and accessible anytime: technovationchallenge.org

Sustainability

Marketplace: Who else is addressing the problem outlined here? How does the proposed project differ from these approaches?

The five programs we have studied closely and learned from are: FIRST Robotics, COMPUGIRLS, Exploring Computer Science, Build IT, Girl Game Company, and Techbridge. Some lessons we have incorporated are: scaling up contact hours for greater learning gains, screening mentors, focusing on group cohesion, exploring career and identities, meeting participants’ social needs through pair programming, and exposure to adult female computer science role models. Technovation is a unique combination of the following strategies: 1) developing mobile phone apps using App Inventor; 2) combining technology and entrepreneurship; 3) leveraging and contributing to the open-source community to increase impact; 4) and focusing on mentorship and educating the mentors.

Team

Founding Story

“I want every girl and every woman to have that confidence that they can lead, that they can create something out of nothing. I think that is so empowering.” - Dr. Anu Tewary Technovation Challenge, a program that teaches high school students about entrepreneurship and computer programming, was founded in the fall of 2009 by Dr. Anu Tewary of LinkedIn. After attending StartUp Weekend in San Francisco, Dr. Tewary was so inspired by the empowering experience and she imagined what her life would have been like if she had been to a StartUp weekend as a teenager. She decided to take the leap and create her own startup- Technovation Challenge- and bring the startup weekend experience to high school girls and female mentors around the world. Dr. Tewary asked Iridescent, a non-profit that provides STEM (science, technology, engineering, and math) education to underserved and underrepresented youth and their families, to run the Technovation Challenge.

About You

Organization:
Iridescent

About You

First Name
Tara

Last Name
Chklovski

Twitter URL
https://twitter.com/tarachk

Facebook URL
https://www.facebook.com/tara.chklovski

About Your Organization

Organization Name
Iridescent

Organization Country
, CA, Los Angeles, Los Angeles County

Country where this project is creating social impact
, CA, San Francisco, San Francisco County

Age of Innovator
18-34

Gender of Innovator
Female

How long has your organization been operating?
More than 5 years
<table>
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<tr>
<th>Has the organization received awards or honors? Please tell us about them</th>
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<tr>
<td>- Funding from the Office of Naval Research &amp; National Science Foundation</td>
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<td>- Our Reynolds Number Poster was a semifinalist in the 2009 National Science Foundation (NSF) International Science &amp; Engineering Visualization Challenge.</td>
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The information you provide here will be used to fill in any parts of your profile that have been left blank, such as interests, organization information, and website. No contact information will be made public. Please uncheck here if you do not want this to happen.

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### Innovation

**How long have you been in operation?**

Operating for 1-5 years

**Which of the following best describes the barrier(s) your innovation addresses? Choose up to two**

Access, Equity.

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### Social Impact

**What solution(s) does your initiative address to better the lives of girls and women by leveraging technology? (select all applicable)**

Access to technology, Access to education/training, Access to economic opportunity.

**What has been the impact of your solution to date?**

The Technovation Challenge has introduced over 800 girls to computer science and entrepreneurship. Evaluations are conducted by an external evaluator.

This past year, 67% of girls said they would like to go on to learn another programming language and we saw a 40% increase in girls’ interest in studying computer science after completing the program. The number of girls who understand what a computer scientist does doubled, and the number of girls who said they knew how to write a computer program increased by 67%.

While the main goal of the program is to increase girls’ interest in the tech industry, the program impacts the female mentors as well. Results from the post-surveys found that the program offered the opportunity to engage girls in technology (95%), network with women working in technology (95%), increase their knowledge of entrepreneurship (83%), learn to be effective mentors (88%), and improve their technical skills (63%).

**What is your projected impact over the next 1-3 years?**

Our goal is to scale up 2x every year (which we have done since 2010) and engage 1,000 girls and 200 female mentors in 2013 and continue to scale-up until we reach 200,000 girls and thousands of mentors worldwide. In 2012, we ran programs that were hosted at technology sites (Google, Twitter, Adobe, and others) in New York City, Boston, Los Angeles, and the San Francisco Bay Area. In 2013, we are changing to a clubs-based model (similar to FIRST Robotics) so that girls anywhere in the world can form a Technovation club at their high school or community group and use our online curriculum with their mentor. This will allow us to use technology to reach many more girls and mentors at a much lower cost.

**What barriers might hinder the success of your project? How do you plan to overcome them?**

Our goal of scaling up 2x per year is ambitious and requires funding, strategic partners, and volunteer mentors. The lack of any one of these key components is a barrier to success. We are creating a steering committee that will include corporate partners who have the same philosophy and similar values. We are expanding our development plan to include diverse funding sources. Finding mentors located in the same areas as our teams and who will commit for at least twelve weeks a year may be difficult. To recruit mentors, we are forming partnerships with companies and universities, hosting professional development events, and presenting at conferences. We are looking at various models to address the location issue, including using Google Hangouts for virtual mentorship.

**Winning entries present a strong plan for how they will achieve and track growth. Identify your six-month milestone for growing your impact**

Expand the current curriculum to 12 weeks and recruit 1,000 girls, 200 teachers, and 200 mentors internationally.

**Identify three major tasks you will have to complete to reach your six-month milestone**

**Task 1**

Develop and make available an online "Technovation team starter kit" for schools/companies with tools and resources (mentor and

**Task 2**

Partner with national and global partners such as National Girls Collaborative Project, Girl Scouts, KQED, YMCA, and high school

**Task 3**

Work with international organizations and partner corporations (LinkedIn, Google, Twitter, Amazon, etc.) to recruit mentors.

**Now think bigger! Identify your 12-month impact milestone**

We will have launched the new international, clubs-based model and will be focusing on evaluation, retention, and dissemination.

**Identify three major tasks you will have to complete to reach your 12-month milestone**

**Task 1**

Work with external evaluator to assess the impact of the program using pre- and post-surveys and interviews.
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<th>Task</th>
<th>Description</th>
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<td>2</td>
<td>Create an alumni retention program to ensure that at least 40% of girls return each year and develop more sophisticated apps.</td>
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<tr>
<td>3</td>
<td>Disseminate model, evaluation findings, and participant stories through varied media sources, including journals, media, &amp; blogs</td>
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**Sustainability**

**Tell us about your partnerships**

Technology Companies - provide access to women mentors, two field trips, senior executives for the Steering Committee, connections to community and educational organizations, and fiscal sponsorship.

Venture Capital Firms/Tech Councils - bring experts in technology and entrepreneurship to lead professional development sessions for the female mentors.

Universities - host two “hackathons” where girls are introduced to women computer science students and faculty.

High schools & National Girls Collaborative Project partners - host weekly sessions for the girls and mentors

**Please elaborate on any needs or offers you have mentioned above and/or suggest categories of support that aren’t specified within the list**

**Source URL:** [https://www.changemakers.com/girltech/entries/technovation-challenge](https://www.changemakers.com/girltech/entries/technovation-challenge)