

## Laboratoria

SNAPSHOT	
<b>Organization(s)</b>	Laboratoria
<b>Project Name</b>	N/A
<b>Country</b>	Peru, Chile, Mexico, Brazil
<b>Date(s) of Implementation</b>	2014 – present
<b>Funding Amount</b>	USD 4,000,000
<b>Partner(s) / Funder(s)</b>	Microsoft; Citi Foundation; Google.org; Omidyar Network; BlackRock
<b>Number of Youth Beneficiaries Trained</b>	Total: 820   Women: 820   Men: 0
<b>Number of Youth Beneficiaries Employed</b>	Total: 600+   Women: 600+   Men: 0
<b>Avg. Monthly Earnings of Youth Beneficiaries after Program</b>	USD 850
<b>Avg. Length of time for Youth Beneficiaries to find work</b>	2 months
<b>Avg. Change in Beneficiary Income</b>	300%
<b>Type(s) of Digital Work</b>	Private Sector – ICT Sector Private Sector – IT Sector Digital Entrepreneurship
<b>Source of Metrics</b>	Internal monitoring and evaluation

### ABOUT LABORATORIA

Laboratoria is a coding bootcamp and job placement established in 2014 that combines applied coding education, socio-emotional training, and deep employer engagement to create opportunities for students. The bootcamp targets low-income women who are, on average, in their mid-twenties. Laboratoria operates in Peru, Chile, Mexico and Brazil, and has the goal of reaching 5,000 young women by 2021.

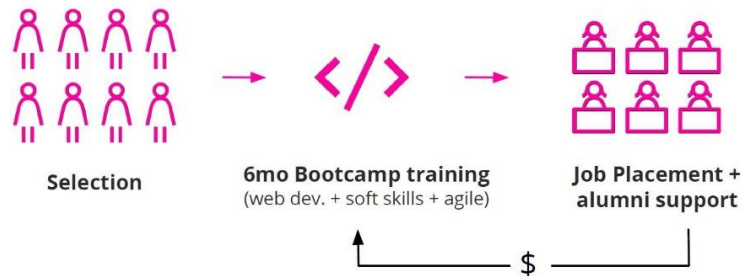
Laboratoria is a social venture where students only pay for the program in low monthly installments only after they have completed the six-month bootcamp and have a secured job. Laboratoria has been supported by Microsoft as well as partners such as the Omidyar Network, the Inter-American Development Bank (IADB), the Citi Foundation, BlackRock and Google.

## PROJECT DESIGN & IMPLEMENTATION

Program Design	Supply-Side Components		Demand-Side Components	
	Training & Skills Development	✓	Improving Access to Finance for SMEs	×
	Employment & Intermediation Services	✓	Capacity Building & Information Provision	✓
	Subsidized Employment	×	Targeted Sector-Specific Approaches	×

## ACTIVITIES

**FIGURE 1 LABORATORIA PROGRAM MODEL**



Source: Laboratoria website, [www.laboratoria.la](http://www.laboratoria.la)

### SELECTION

Laboratoria conducts a thorough screening process to identify high-potential young women from low-income backgrounds. Through a selection process that includes exams, an introductory course to programming, a personal interview, and real class dynamics, Laboratoria collects over 60 data points to identify those applicants with the potential to successfully complete the intensive training process and enter jobs in the IT industry.

### BOOTCAMP TRAINING

Laboratoria offers a six-month bootcamp that teaches young women the essentials of coding. The program starts with a common core, where students all cover the same content, before branching off into specializations. Beneficiaries have the option of focusing on front-end development or user-experience (UX) design. The curriculum for developers includes training in JavaScript, HTML, CSS and other highly demanded software tools. UX Designers graduate with a unique profile that combines coding with UX skills.

Laboratoria has incorporated several strategies into its bootcamp training:

### **Classes that Mimic Work**

Instead of following a traditional educational model, Laboratoria participants learn as if they were working. The learning model that Laboratoria uses is known as the ‘Agile Classroom.’ Each ‘sprint’ is a two - three-week unit, works toward developing a product, such as an app that predicts a public transportation user’s card balance after taking a subway ride. Each Sprint begins with a Sprint Planning Meeting where the students create plans on how to work for the next few weeks. Every Sprint ends with a Sprint Retrospective, to understand the lessons learned and learn from the mistakes made. The students thus learn to organize themselves in teams, divvying up responsibilities and setting their own timelines. Finally, much of the training is self-paced—a skill crucial for advancement in the tech industry.<sup>1</sup>

### **Business-directed Curriculum**

Laboratoria works closely with tech companies in Latin America and Silicon Valley, surveying hiring managers to learn what skills are required for web developer openings. The curriculum is project-based and open-source, and is shared widely with developers and industry professionals for feedback. With this feedback, as well as that of hiring companies and Laboratoria’s own tech team, Laboratoria creates an education program that would prepare its students to earn a job immediately after graduation. By adding skills needed for the most hard-to-fill positions, Laboratoria equips its students to enter high opportunity jobs where companies are hungry for talent. Laboratoria also shares its curriculum with interested education institutions, and nonprofit staff have met with several universities in Peru.

### **Complementary Technical and Soft Skills Training**

Laboratoria’s program has a strong focus on life skills, which are intertwined with how technical skills are developed. Project-based learning helps ensure that students develop skills such as teamwork, communication, self-awareness, planning and time management, and problem-resolution. The soft skills program has two parts. The first part occurs in the first month of the program, during which young women participate in training modules on stress management, gender issues and identity, and effective communication. The second part takes place towards the end of the training program, and is more focus on employability. Training module topics include interview preparation, workplace culture, and financial management.

### **Values-based Learning**

To increase retention rates, and ensure that women are truly prepared for entering formal employment opportunities, Laboratoria creates a culture based on an inclusive and participatory learning strategy. Beneficiaries are expected to be in charge of their own learning processes, displaying their commitment to pursuing IT-related education and employment. Program staff help to cultivate a growth mindset, where students develop the belief that they can overcome challenges with the encouragement, support and tools that Laboratoria provides to them. Laboratoria provides a safe space for beneficiaries to experiment, make mistakes, and to provide feedback to each other and to staff.

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<sup>1</sup> World Bank (forthcoming). *Women Wavemakers: Practical Strategies for Attracting and Retaining Women in Coding Bootcamps*. Washington, DC: World Bank Group.

## **JOB PLACEMENT & ALUMNI SUPPORT**

Laboratoria's job placement team continues communication with companies that have hired its graduates to ensure the match goes well. If a graduate needs additional training to meet the demands of her new job, for example, Laboratoria can customize her extended training to fill those gaps.

### **Talent Fest**

Just before graduating from the six-month boot camp, Laboratoria students participate in Talent Fest, a 36-hour hackathon. Participating companies provide a real web development problem they face, and teams of student's brainstorm, problem-solve and present solutions. Each company is assigned to a squad of 3 to 4 students, who are presented with real life challenges during a ten-minute overview by each firm. Companies have access to historical data on students' performance throughout the bootcamp. Laboratoria also provides a live evaluation tool used by the companies to assess the real-time performance of the students with an eye to both technical and soft skills. The companies which have been part of this fest in the past are Lyft, BCP, Scotiabank, Tekton Labs, GMD, Ministerio de la Producción del Perú, Urbaner, ThoughtWorks, Globant, Everis.

The in-person participation in the Talent Fest gives companies the chance to see firsthand how the young women work, providing crucial insight into finding the right fit for openings. At the same time, the companies hold interviews. Based on research conducted with 52 companies in Latin America, Laboratoria discovered that firms typically spend between one to three months to recruit a candidate. At least 3 staff members are usually involved in the process. Thus, this efficient process is especially appealing to businesses, which can cut the time required to find and hire a new employee from 3 months to just a few days.

The companies participating in and sponsoring Talent Fest have first access to Laboratoria's pool of talent, but other businesses can pay to browse students' profiles as well. Students' profiles include details on the technical skills they are trained in as well as insight into their interests and how they work. This additional layer of information helps hiring managers identify candidates who are most likely to thrive in their company's culture and work environment. Each company also pitched to the teams, providing information on company culture, structure and hiring process.<sup>2</sup>

### **Alumni Services**

Laboratoria supports its graduates with community and education services once they graduate. There are technical workshops organized based on student demand and community events to connect with fellow alumni.

### **Private-Sector Partnerships**

Laboratoria partners with more than 200 companies to fill the needs of businesses and empower graduates to enter a professional field. They engage in placement events, student and alumni workshops and other opportunities.

### **Mentorship**

When students near the completion of the boot camp training and begin their job search, Laboratoria pairs them with mentors from the technology field. The one-on-one attention helps the budding web

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<sup>2</sup> Ibid.

developers prepare for interviews or finesse a LinkedIn profile. Thanks to word of mouth, news articles about the nonprofit and partnerships with local companies, Laboratoria has no trouble finding enough mentors.

## ADDITIONAL SERVICES

### Digital Transformation

Companies undergoing digital transformation can enroll in Laboratoria for Business, an in-person course that walks groups of employees through the process of digital modernization.

## RECRUITMENT STRATEGIES

**4,000**  
applicants

**60**  
data points gathered

**9%**  
accepted

Most of Laboratoria's target beneficiaries use social media platforms such as Facebook and Twitter. Laboratoria uses promotional videos featuring their students to recruit new cohorts four times a year. In the last 3 years, over 7,500 women have applied to Laboratoria. The bootcamp received over 4,000 applications for their most recent 2017 cohort, and accepted only 9% of applicants.<sup>3</sup>

An application process, which includes an interview and a test to gauge their aptitude for learning and persevering (but not existing understanding of CS), helps the nonprofit identify a cohort of 40-60 new students in each site. Additionally, Laboratoria assesses its applicants using psychological tests designed by professional psychologists.

## IMPLEMENTATION STRATEGIES

**Promote Teamwork.** In order to promote teamwork, a "Learning Squad" is created of 6-8 students that work to accomplish a certain goal for the Sprint. For every Sprint, a new Squad is formed. This helps in improving the ability to create new working relationships every 2-3 weeks. Each Squad is appointed a coach "Jedi Master". The Squad meets daily with their coach and starts the day with a Daily- Standup. A Daily Standup is when students reflect on what goals they achieved the previous day.<sup>4</sup> They decide internally how they can communicate with each other. Teams have used Slack, WhatsApp groups and G-chat.

**Grading System.** Laboratoria does not follow the standard grading system. Instead, it follows the points-and-rewards system. Students earn points for performance, effort, and outstanding behaviors. They also can win rewards through individual or group achievements.<sup>5</sup>

<sup>3</sup> Average of 2017-II cohorts in Peru, Mexico and Chile.

<sup>4</sup> World Bank (forthcoming). *Women Wavemakers: Practical Strategies for Attracting and Retaining Women in Coding Bootcamps*. Washington, DC: World Bank Group.

<sup>5</sup> Ibid.

**Provide Counselling.** Laboratoria has 2 psychologists as part of their staff to help build the women’s self-esteem during the program. They also provided mental health support for the students coming from low-income families who are dealing with stress or any personal issues such as violent intimate relationships.

**Learning Management System.** Laboratoria has developed a learning management system (LMS) so that students can practice more at home. The LMS allows students to measure their progress and complete practice exercises. These features are inspired by Khan Academy tutorials and videos.

**Placement Application.** Laboratoria has developed a placement application that directly connects hiring companies with bootcamp graduates.

## BENEFICIARY EXPERIENCES

Laboratoria graduate Lizeth Kenny Lopez Zamudio took a Microsoft Azure workshop provided by a Microsoft Philanthropies grant, where she learned to use new software platforms, programming languages and artificial intelligence. She now uses those skills at her job in a financial services company by programming customer service chat bots, working remotely on a virtual machine and presenting case studies on Azure.

*“I’d like to build something to help someone. I always had that eagerness to help and advance myself.”*

*Lizeth Kenny Lopez Zamudio, Laboratoria graduate and web developer*

## SUSTAINABILITY

The fee structure for Laboratoria is unique – students only start paying for their program only once they graduate and find a job. Laboratoria’s tuition scheme allows for low or no fees for low-income students, which are later recouped through a 10 percent contribution from salary for 24 months once they graduate and are employed. This provides additional incentive for female candidates to join the program.

Laboratoria financial model is based on several additional components:

- **Grants.** (including support from Microsoft) and recognition (from MIT and Google, for example), the nonprofit’s leadership committed to the goal of becoming self-sufficient by 2021. They have built-in revenue streams to fund their work in several ways.
- **Student repayment.** Laboratoria charges employed graduates a small monthly education fee, which “pays back” the free training they received in the six-month boot camp. Graduates pay 20% of their monthly salary, and an average working graduate will pay around USD 180 a month. Not only does the fee help cover the cost of ongoing education; it deepens graduates’ long-term connection to Laboratoria, Martinez Franklin says.
- **Hackathon sponsorships.** With a USD 1,500 sponsorship fee, a company can participate in Laboratoria’s Talent Fest, a 36-hour hackathon that tasks teams of soon-to-graduate students to

solve companies' real problems. It's not uncommon for companies to hire students there on the spot, Martinez Franklin says, and the immediate value to companies means the nonprofit has no trouble securing sponsors.

- **Hiring fees.** Companies that are looking for new sources of talent pay to access Laboratoria's job placement web app, where potential employers can browse graduates' profiles and filter candidates by coding language or technical capabilities. The app includes data on each graduate's technical and soft skills, location, job title sought and proficiency in English.
- **Expansion.** The organization is working to expand sustainably. Although the nonprofit has explored assorted options for widening its reach, including a franchise model, Laboratoria is still maintaining control over all launches of new sites while working with on-the-ground partners in new sites.

## EMPLOYMENT OUTCOMES

**820**  
trained

**600+**  
employed

**2 months**  
average time to find job

Laboratoria has established a successful career pipeline that has placed over 600 young women into digital jobs. Graduates work in more than 250 companies such as Everis, Accenture, IBM and Scotiabank. Laboratoria also boasts a 90% rate of employer satisfaction with Laboratoria hires.

## KEY FINDINGS

1. **Necessary skills need to be provided.** The first group of young women to graduate got jobs in prototyping, yet those positions didn't offer as much potential for advancement. The women may lose out on jobs due to not knowing programming or computer science. The cohorts at Laboratoria are now equipped with the necessary skills.
2. **Self-learning must be at the core of the program.** If students do not learn to learn by themselves during their time at Laboratoria, they have a challenging time adjusting to the continuous learning needs at the job. This is why Laboratoria's teaching methodology has evolved to have self-learning at its core.
3. **Support from family improves performance.** In Laboratoria's very first cohort, staff found that young women with the support of their family were more successful during the very intensive training. Now they invite families to visit and learn about Laboratoria at the welcome session, mid-program and at graduation, and pushback from family members is much less common.
4. **Selection process was not intensive enough.** The most painful part of running Laboratoria, Martinez Franklin says, is when a young woman drops out of the program or chooses not to pursue a web development job. So, interviews now focus more intently on the traits (e.g., determination, creativity) that enable young people to stick with an intense program.

## RECOMMENDATIONS

- 1. Adaptable and flexible skills training organizations.** in a rapidly changing labor market, organizations focusing on skills training must be able to adapt and change at a rapid change, following market demand and applying learnings from every cohort. This agile pace is crucial to consolidate programs that can remain relevant and prepare competitive talent
- 2. Holistic approach to training.** no technical skill will lead to employment if students lack crucial soft skills for work, such as communication, teamwork and the capacity to receive and give feedback. Skill-building programs must design practical ways of building both in short periods of time through immersive, work-like experiences.
- 3. Close connection to market demand.** skills building programs must follow closely market needs, working in close connection with employers to assess how fast they can grow and how to evolve their programs.