



techbridge girls™ 

Impact Report

2023-24

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1. About Us



Techbridge Girls (TBG) has been re-engineering equity in STEM education since 2000. Our equity-focused professional development and STEM curriculum offerings are designed to engage Black, Indigenous, and all girls* and gender-expansive youth of color to participate and persist in STEM education.

Equity: fair and without barriers

"I was always interested in tech but never felt like I was welcome in those spaces. The equity piece of Techbridge Girls' programs is what convinced me to join, even though I was nervous about mastering and teaching the STEM parts of the program. I'm excited to create a space for youth where everyone can feel like they matter and belong."

Our Mission

Techbridge Girls builds equitable systems in STEM education.

Our Vision

We envision a time when BIPOC girls and gender-expansive youth access STEM fields in diverse, equitable, and sustainable ways.



* Techbridge Girls (TBG) serves Black, Indigenous, and all girls of color, which includes cis girls, trans youth, gender non-conforming, and/or non-binary youth who experience(d) girlhood and economic insecurity as a part of their journey.

2. Letter from Our CEO



Did you ever have an educator who made you feel welcome, especially in a subject that you felt scared of? For me, it was my math teacher in 8th grade, whose encouragement got me excited about geometry. And when I talk to women who are working in STEM fields, almost all of them can point to an educator who encouraged them.

At Techbridge Girls, we make girls of color feel welcome in STEM. To do this, we start by helping our educators feel welcome. Educators are the bridge to the future. And they bring their lived experiences, learnings, and assumptions to the classroom. I hear from many an educators that they're anxious about teaching STEM to students. They feel unprepared. They feel unsure. They feel left out of STEM.

We're here to change that. Our work at Techbridge Girls is to prepare educators to be the ones who make a difference: the ones who trust in their own abilities and in their support systems, the ones who see beyond gender, racial, and class bias to the potential that shines in all kids.

Together, we can welcome in the next generation of STEM professionals – the resilient, joyful problem-solvers of the future – and make our classrooms places where all are welcome, and all students learn and thrive.

Thank you for being a part of this work.

Sincerely,

Savita Raj
CEO, Techbridge Girls

Learn more about Savita in our new video series on the Techbridge Girls YouTube!



3. Our Framework



“We all have different brilliance.

So when we come together, we can support each other and use our talents to come up with the best solution.”

Techbridge Girls student participant

Techbridge Girls (TBG) envisions STEM classrooms as places where our “different brilliance” shines. We focus on the students, educators, and role models who have traditionally been left out of the STEM narrative, centering the experiences of Black, Indigenous, and all girls and gender-expansive youth of color. Our fun, hands-on, inquiry-based programs encourage girls to explore STEM concepts while also building community, developing trust, and showing up as their authentic selves.

Our equity framework uses three pillars: *being STEM, doing STEM, and using STEM.*

Being STEM >

Many of our participants, students and educators alike, tell us that they have not felt welcome in STEM classrooms or conversations. As a result, many self-select out of STEM. In order to make STEM classrooms and careers truly diverse, we need to create a sense of belonging.

We do this by creating culturally relevant and gender-responsive STEM education. TBG’s trainings and curricula are designed to empower and equip educators to bring out the brilliance and potential of all students.

TBG’s curricula highlights women of color who are major contributors to STEM fields. Most of us came up in a culture that focused almost entirely on white men in STEM, creating the illusion that these figures are the only significant members of the STEM community.

By presenting a richer, more diverse, and more accurate account of the many brilliant minds who have contributed to the blossoming of STEM fields, we make space for BIPOC girls to see themselves as a part of this story.



Doing STEM >

Why is STEM education so important?

It's not just about what we learn – even though robotics and AI and math are all fascinating. It's about how we learn.

STEM education teaches us:

- how to be resilient
- how to solve problems
- how to adapt to changing circumstances
- how to drive the change we want to see

Techbridge Girls utilizes the Engineering Design Process (EDP) to encourage brainstorming, collaboration, and iteration as girls design and test different STEM solutions to real-world problems.

Through this process, girls learn resilience and grit. They learn to fail and keep going. They learn to try again. Educators trained through TBG embrace the Engineering Design Process as a tool for STEM exploration, creating an environment where BIPOC girls can confidently innovate, experiment, make mistakes, and try again.



Using STEM >

Social change starts in the classroom. We need resilient, creative thinkers to help us solve our most pressing issues. We especially need BIPOC girl genius. Techbridge Girls uses story-based learning to develop critical thinking skills at the intersections of STEM and social justice.

By sharing the stories of BIPOC women and gender-expansive STEM professionals using STEM to create a more equitable world, our curriculum invites girls to see themselves as changemakers. Students identify areas of improvement in their own communities and design solutions to problems that they care about.

Girls engage in age-appropriate conversations about social justice, ranging from discussing historic and ongoing inequities through the lens of STEM stories to developing ideas for creating a just society through STEM.

4. Our Programs



Techbridge Girls offers equity-focused **educator training**, **STEM curricula**, and **program kits** to prepare and support cohorts of Out-of-School-Time (OST) educators in delivering engaging, equity-focused STEM programming. Through our STEM Equity Trainings and our STEM Equity Learning Community, we are developing a rich and growing network of educators committed to overcoming systems of inequity and identifying and nurturing STEM talent in girls of color.

Key elements of all TBG programs:

- Training centered on STEM Equity Framework
- Access to TBG Community of Practice
- Badging by Credly for completion of certain programs

"Throughout the program all the girls were engaged! Some were shy and I've watched them 'come out of their shell' within their groups and show their creativity and excitement for each project. Coming in, 60% of the girls did not have a direct interest in STEM pathways, yet 100% expressed they learned something new and exciting about STEM. They have an inspired view of success and their STEM abilities."

Techbridge Girls educator





STEM Equity Professional Development >

TBG's professional development programs are designed to train and support educators to reach BIPOC girls through STEM programming. We offer credentialing that recognizes the deep engagement and learning in STEM equity that our educators complete. Our professional development opportunities build a cohort of educators who are trained to see beyond cultural biases to engage and inspire students who might otherwise be overlooked.

Our STEM Equity Trainings give educators tools and strategies for teaching age-appropriate engagement with youth, building authentic connections with personal storytelling, and creating a safe, gender-inclusive space.

2023-24 STEM Equity Trainings:

- Role Models Matter
- What is STEM Equity
- Understanding Personal Bias
- Belonging in STEM
- Engaging Role Models

STEM Equity Learning Community (SELC) >

Our SELC is a training and coaching program for educators.

Through two cohorts (fall/spring), educators receive virtual training and coaching that provide strategies for engaging Black, Indigenous, and Latina girls and gender-expansive youth in STEM. SELC invites participants into a community of like-minded educators.

By sharing their experiences and expertise, SELC participants support and empower each other to persist in building STEM equity.

Techbridge Girls STEM Curriculum Facilitator Program:

TBG's gender-responsive and culturally relevant STEM curricula, program kits, and educator training equip educators to deliver quality, research-based STEM programming in their schools and communities. Aligned with National Generation Science Standards (NGSS), our program framework draws on girls' interests and experiences and ensures they see themselves reflected in STEM fields, past, present, and future.

Using a blend of theory and application, facilitators are trained and certified in delivering the TBG curricula.

Facilitator training, centered on our STEM equity framework, provides grade-band-focused lesson plans and materials and brings educators and facilitators into the TBG community of practice. TBG offers options for school year enrichment programs, summer enrichment programs, and one-time workshops. Facilitators receive badging by Credly for completing the training programs.



"I know what it's like to be the only one at the table or in a class that looks like me. The difference though was that I had support around me that told me I belonged and that I could and should be there! I want to be that for the youth I work with, an advocate that they belong and that they should be there. Every youth deserves a chance to do what they want and just need someone to believe in them."

Techbridge Girls educator

Turnkey STEM programs:

INSPIRE

Designed to engage 3rd-5th grade girls in STEM through culturally relevant, story-based, hands-on STEM experiences.

This program offers (12) exciting ninety-minute lessons that center BIPOC contributions to STEM and empower girls to use STEM to help save the planet! Youth create inventions using plastic prototyping to move from single-use plastics to circularity and build circuits that rely on clean energy.



IGNITE

Encouraging 3rd-8th grade girls to see themselves as STEM inventors

Eight one-hour lessons immerse students in a variety of STEM fields will teach them about young inventors -- other BIPOC girls who have invented solutions to improve their communities -- and guide them in designing and creating their own inventions from designing robots to showcase their STEM lineage, to remixing everyday items and creating prototypes to improve lives in their communities.

CHANGEMAKERS

Centering BIPOC contributions to STEM and exploring real-world events like the Flint water crisis through the lens of community change-makers, this program enables middle-school girls to see themselves as the superheroes our world needs.

Twelve 90 to 120-minute lessons build girls' STEM joy, excitement, belonging, and agency through culturally relevant story-based learning. Youth rethink the way traditional schools are structured to design inclusive and sustainable spaces and develop chatbots that incorporate diverse languages, perspectives, and experiences.

TRAILBLAZERS (new!)

This innovative summer STEM experience is crafted to provide rising 6th-8th grade youth with immersive, hands-on experiences.

From coding drones to inventing assistive technology, lessons encourage curiosity, problem-solving, and creativity during a summer timeline.



CATALYZERS (new!)

In this condensed summer program, high school aged students gain STEM knowledge, build resilience and determination, and explore college access and STEM career opportunities.

From building water filters to coding songs to developing personalized shampoos, lessons blend historical and contemporary perspectives to guide students in developing STEM solutions with a positive impact.



5. Our Impact

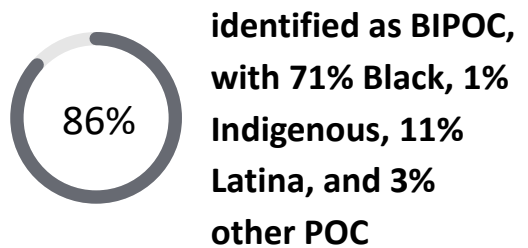


Participant Demographics*:

ADULT PARTICIPANTS



YOUTH PARTICIPANTS

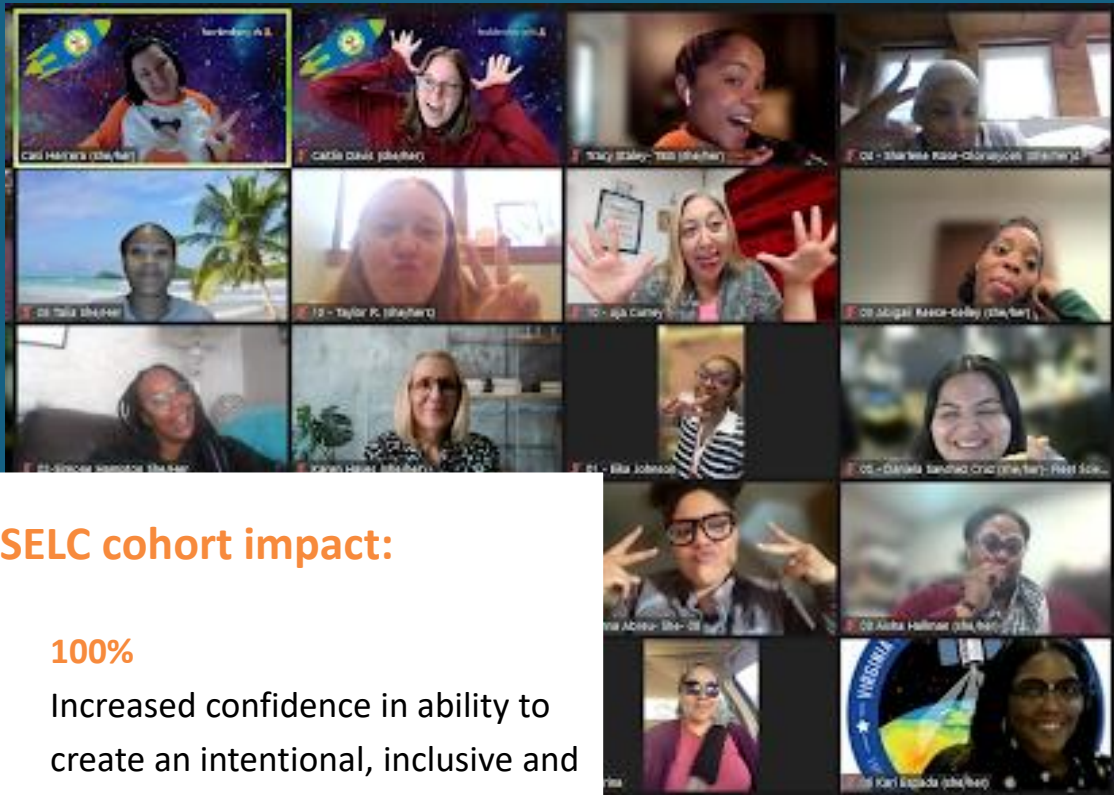


** About 2% of adults and 15% of youth participants selected 'other/choose not to respond' in answer to these questions.*



“As a Black woman growing up in a poverty-stricken neighborhood, I experienced inequality firsthand. Yet the STEM Equity Learning Community opened my eyes to issues I did not consider. It was empowering! It was eye opening!”

Techbridge Girls educator



SELC cohort impact:

100%

Increased confidence in ability to create an intentional, inclusive and safe space for diverse perspectives and identities to be shared and celebrated within STEM.

100%

Increased confidence in ability to seek and incorporate BIPOC women's stories into teaching

100%

Increased confidence in ability to recognize systems of inequity

100%

Increased confidence in ability to integrate equity into work

Indicators:

All participants reported increased confidence in not only recognizing systems of inequity but also in countering these systemic issues by centering BIPOC stories and establishing inclusive spaces for all their students, ensuring that diverse perspectives and identities are welcomed and celebrated in STEM.

Role Models Matter program impact:

97%

Understand how bias affects youth in educational settings

95%

Gained awareness of the ways BIPOC girls* experience bias within STEM education and fields

91%

Gained strategies to inspire a sense of belonging in STEM for BIPOC girls*

92%

Gained strategies to develop authentic connections with youth

Indicators:

Most participants reported an increased understanding of how bias affects youth in educational settings and the ways in which BIPOC girls experience bias within STEM education and field.

Participants learned strategies for developing authentic connections with youth and inspiring a sense of belonging in STEM for BIPOC girls.



STEM Curriculum Facilitator Credentialing impact:

ADULTS

95%

Understand bias in educational settings

97%

Understand the engineering design process as a tool for STEM exploration

93%

Understand the STEM concepts in the ChangeMakers/Ignite/Inspire curriculum

YOUTH:

83%

More curious about STEM electives and majors, more confident in their STEM skills, and are more likely to persist in STEM

90%

Learned about BIPOC STEM lineage

87%

Learned about STEM careers

88%

Learned STEM concepts/skills

"The Techbridge Girls training] changed how I look at my students in the room. It made me think and question how I approached my students...to see them all as equals and teach them all as such. No boundaries for them -- the sky has no top."

Indicators:

A majority of adult participants reported an understanding of bias in educational settings, of the engineering design process as a tool for STEM exploration, and of the STEM concepts in the ChangeMakers/Ignite/Inspire curricula.

Almost all youth participants reported being more curious about STEM electives and majors, more confident in their STEM skills, and more likely to persist in STEM. A large majority of participants learned about STEM careers, BIPOC STEM lineage, and STEM concepts and skills.



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