Coding at the homeless shelter

BRIDGING THE GAP

A national nonprofit opens doors – and potential career opportunities – to homeless girls by teaching them how to program computers

November 17, 2016
By Celine Hacobian

9,800,000

BOSTON—Mayumi Brooks gathers 10 girls for class on a recent evening in Boston.

The girls make their way into the narrow classroom covered with motivational posters, saving seats for their friends. Some start searching music on YouTube,
while others talk about their days at school. In a few minutes, their teacher, Stuart Guertin, will arrive to walk them through their first official coding class.

But this class doesn’t take place at a university or a high school. It’s at a homeless shelter.

Some girls at Brookview House are currently homeless, while others have transitioned into permanent housing. Many live at Brookview, in the apartments upstairs.

Whether they are inspired to go into computer science or engineering, Mr. Guertin hopes the classes will offer them access to a better future.

Guertin sees parallels between the girls in the class and his own experiences.

“It kind of reminds me of when I was learning how to code,” he says. “A whole new world opened up for me and I’m really proud to be able to open that door for them.”

“These girls can grow up to be role models for their friends who aren’t in the program [and I hope] that they can ... be a little smarter, a little more able to solve problems in their own community,” says Guertin, a volunteer who works in software marketing. “Programming is problem-solving.”

Girls Who Code, a national nonprofit whose mission is to involve more girls in technology and introduce them to coding, provides resources for schools, libraries, and community centers around the country to create their own after-school programs to teach coding to girls from grades 6 to 12. The program started with 20 girls in New York in 2012 and will serve 40,000 girls in all 50 states by the end of this academic year.

Programs like Girls Who Code are seen as an important path to exposing girls – especially low-income and minority girls – to science, technology, engineering, and math.
“Kids are way more interested in science if they do hands-on science,” says Martha Cecilia Bottia, an research assistant professor in the sociology department at the University of North Carolina in Charlotte. “If they do coding and see they are able to run a program,” they’re more likely to stick with it.

Hands-on science
She would like to see such efforts expanded as early as possible, including through cartoons and children’s books, to fight an enduring cultural bias that math and science fields – and their well-paying jobs – aren’t for females.

“They’re getting this idea from everywhere – media, culture, the toys they play with, gender composition of the math and science classes they have – that they are not supposed to be there,” she says. “They need to know that they are capable.”

Just 22 percent of students who took the AP Computer Science exam were female, while 13 percent were students of color, according to the College Board’s 2015 data. As recently as 2013, there were entire states – Mississippi and Montana – where no female, African-American, or Hispanic students took the AP computer science exam.
Dr. Bottia says that not only does girls' interest decrease as they get older, but the encouragement from their counselors and peers at school also declines. “It can be a chilly climate, and they don’t feel welcome,” she says. “They have preconceived ideas that the ones that are good in math are boys.”

The barriers only increase in impoverished areas, especially in terms of the advanced classes that schools offer, she says. “Poor schools are going to have less chances to get to these classes.”

Girls Who Code offers the girls a stipend of $50 to join the nine-month-long program, which Ms. Brooks, the youth program director of Brookview, sees as a parallel to getting paid for a job in the real world. While the stipend draws many of the students to the program initially, that can change once they arrive in class.

“I actually started coming to girls coding because my mom was like, ‘If you don’t get the $50, I’ll cut your phone off,’ so I was like, ‘Oh snap, I gotta go to girls coding,’ ” says Patricia Cordero, 15. “But I’m starting to notice it’s something good.”

Julissa Bies says she is glad her daughter, Jelissa Dume, 16, attends the coding class, not only because of the opportunity to meet new people, but also to practice speaking English.

Some of the projects that the girls have worked on include building a website with job listings for girls who are frustrated by age requirements and an informational website about Brookview accessible by scanning a bar code printed on a sweatshirt.

The first lesson
But Lesson 1 tonight is on a topic the students chose themselves: fashion.

Using Scratch, a tool developed by the Massachusetts Institute of Technology to teach beginners coding, they experiment with changing a character’s hair, eyes, outfit, and what kinds of props they can add to their images.

One of the girls figures out how to change the color of a shirt from green to pink. Guertin says, “You’ve just done your first programming.”

Brooks gathers the girls midway through the class for dinner. Today’s choice: Chinese food. She asks everyone to go around the room and rank the day they had on a scale of 1 to 10. Most of the girls are tired and give their days a 1 or a
0, explaining that their school day was “boring” or that “the teacher talks too much.” Brooks has become so close with the students that, when asked to fill out a parent or guardian’s email, many type in hers.

Brookview’s program, funded by a grant from the Richard and Susan Smith Family Foundation, teaches up to 10 students at a time. A program at a site in the nearby Roxbury neighborhood can take up to 15 students.

Tech programs aimed at low-income students are particularly important, Bottia says, because many times, these girls don’t have a support system to encourage them to pursue careers in these fields.

“Many people of the lower socioeconomic status are concerned about how they’re going to pay for their education, how they’re going to go out and make money soon. Although [STEM careers] are more lucrative in the long term, they’re not in the short term,” she says.

To address this, Brooks organizes field trips for the students. Last year, the girls visited Akamai Technologies, ENC Technology Corp., and MIT. This year, their planned trips are to Google, TripAdvisor, and Wentworth College.

During all the trips, “they’ll get a tour, a discussion panel, the girls will research that company and ask questions regarding how to get involved in that company, what is required for different positions in the company. They will research salary and compare and talk about how fair is a woman’s salary compared to a man’s salary in the technology world,” Brooks says.

One outcome of the program many of the girls seem most grateful for is the bond they have formed.

Alexis Olaes, 17, was originally worried about the potential drama, but realized that because of the focus of the class, the girls were more interested in helping one another than gossip.

“All of us really treated each other like sisters. If one of us needed help with something and one of us finished the program already, we would go back and help them,” she says. “We would put stuff out there and it would stay between us because we had that great bond to share stuff with each other. We trust each other.”