Opinion. How to Get Girls Into Coding

By Nitasha Tiku May 31, 2014

WHEN I was 7 years old, I knew the capitals of most major countries and their currencies. I had to, if I wanted to track down a devious criminal mastermind in the computer game "Where in the World Is Carmen Sandiego?" On screen, the ACME Detective Agency would spit out clues like notable landmarks to help players identify the city where Carmen's globe-trotting henchmen were hiding out. I wouldn't learn how to pronounce Reykjavik for more than a decade, but I could tell you that its currency was called the krona.

I was the child of Indian immigrants, and like any begrudging Bengal tiger cub, I penciled in fill-in-the-blank maps and memorized multiplication tables after dinner. I was much more motivated to learn about geography by chasing Carmen Sandiego on the family Macintosh Plus. I couldn't confidently point to Iceland on a map. But I did become a technology reporter.

A huge nationwide push is underway, funded by the nonprofit Code.org's corporate and billionaire donors, from Amazon and Google to Bill Gates and Mark Zuckerberg, to introduce American schoolchildren to coding and to redefine it as a basic skill to be learned alongside the three R's. Code.org's curriculum has been adopted by 20,000 teachers from kindergarten to 12th grade.

But if coding is the new lingua franca, literacy rates for girls are dropping: Last year, girls made up 18.5 percent of A.P. computer science test-takers nationwide, a slight decrease from the year before. In three states, no girls took the test at all. An abysmal 0.4 percent of girls entering college intend to major in computer science. And in 2013, women made up 14 percent of all computer science graduates — down from 36 percent in 1984.

The imbalance persists in the tech industry. Just this week, Google released data showing that women account for just 17 percent of its tech employees. The problem is not only getting girls to computer class, but keeping them there.

Natalie Rusk is a research scientist at the Massachusetts Institute of Technology Media Lab who helped develop Scratch, an open-source programming platform where kids can code games and animation and then share projects and how-to tips. She thinks the next two years will determine whether coding can start to close the gender gap. “One of the key reasons to broaden participation is to get more diversity of who is designing these technologies,” she said. “It’s being presented as, ‘Learn how to program,’ ” she said, “but not, ‘What do you want to program? What’s your idea?’ ”

So what if, instead of trying to guess at what might get girls interested in technology, we looked at what’s already on their screens? While parents often worry about recreational “screen time,” some educators now believe that gaming could be a way to get girls interested in coding, and even to increase the numbers of girls in STEM — science, technology, engineering and math — classes and schools. Reshma Saujani, founder of the nonprofit organization Girls Who Code, said, “We have to meet them where they are.”

“Students kept walking in asking to learn how to code wearing Minecraft T-shirts,’” said Stephen Foster, a founder of the San Diego-based organization ThoughtSTEM, which teaches kids ages 8 to 18 to code in after-school programs and summer camps. “Once it happened the 20th time, we started to realize, ‘Oh, hey, maybe these kids know something that we don’t.’ ”

Minecraft, from the Swedish game developer Mojang, looks like a 3-D fairy tale that was cranked through the Matrix and came out rendered in blocks. Players can use modifications or “mods” written in Java and can build mods of their own design. You can play in “survival” mode — battling “creepers” and zombies — or “creative” mode, in which you build anything from a house to a village to a fantasy world. The latter seems to be especially appealing to girls.

Code.org, despite millions in funding and a push from President Obama, is not yet mainstream. Minecraft, however, is. Lady Gaga released a Minecraft-themed music video in March and “The Simpsons” riffed on the game in the credits of an episode in April. Minecraft has 100 million registered users; spend any time around elementary- and middle-school kids and you’ll see that it has cornered the market.

“We’re happy about the Minecraft phenomenon because it is just about creating,” said Dr. Rusk of M.I.T. “First it seemed like it was mostly boys, but now a lot of girls are getting engaged in Minecraft.”

A hundred students were on Thought STEM’s waiting list for its first Minecraft class two months ago. “I would say that the girls are actually outperforming the boys, at least in my class,” Mr. Foster said. “And it’s very good to see, because as computer scientists, we definitely recognize that

there's a big gender disparity in our field." He added, "There are just so many girls who play Minecraft who, as far as I'm concerned, are all people who can be swayed to pursue coding — they just don't realize it yet."

Kimberly Bryant, who spent a decade as an engineer in biotechnology, is the founder of the educational nonprofit Black Girls Code. Gaming has evolved into one of what Ms. Bryant calls the "core pillars" of Black Girls Code. "We find that it taps into every element of coding necessary to be a technologist," she said. "You have the design, basic computational skills, math." She favors gaming platforms and languages that are designed to teach coding, like Scratch, Alice and a new platform called Beta.

To avoid perpetuating the tech industry's glaring gender gap, schools should look more closely at these grass-roots initiatives that have had success in attracting and inspiring girls. One X factor seems to be the presence of female role models, which can be hard to come by when you're one of the only girls in your computer science class. Girls know the stereotype of a geeky guy hacker in his basement all too well, and interacting with women who use computer science in their professional lives gives them an idea of something to go after besides an endless string of code. Many of the instructors, coding evangelists and students I spoke with credited a female mentor who nudged them along.

Rebecca Feldman, a seventh grader from Queens, had a discouraging experience in a robotics after-school program. "I was one of two girls in the class," she said. "We kind of had to fend for ourselves." Then her parents heard about CoderDojo, a nonprofit dedicated to teaching kids to code free of charge.

CoderDojo NYC, which has a 50/50 split of girls and boys and is ethnically diverse, was co-founded by Rebecca Garcia, a 23-year-old programmer who gravitated toward coding through an early obsession with NeoPets, an online game popular with girls that lets players customize their pet shops using the languages HTML and CSS.

Rebecca Feldman was mentored by Ms. Garcia — “a cool adult I could go to for help” — and became known as Little Rebecca. One of her projects is a website about tomboys. “Her parents told me she had never heard of computer science before,” Ms. Garcia recalled. But after the very first session, she told her parents, “I really like this. Is this something you can do for a living?”