CRACKING THE CODE TO A BETTER CAREER

Technology education primes young people to excel in the digital age

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Until last summer, Benite Rutaganira was convinced that a career in technology wasn't in her future.

Her older brother spent hours writing code and it didn't seem like creative work, says the 17-year-old from Sacramento, California. "My idea of computer science was sitting behind a desk typing lots of zeros and ones," she says.

Now Ms. Rutaganira is enrolled in AP Computer Science and plans to make it her major when she goes to college next year. "It finally clicked in my head that coding has tons of possibilities," she says.

ADDRESSING THE STEM GENDER GAP

Ms. Rutaganira's new path is a triumph for Girls Who Code, a seven-week summer program sponsored by technology companies, including Intel, that aims to inspire and educate teen girls about the opportunities to be found in technology and engineering. The goal is to upend some dismal statistics: in middle school, 74 percent of girls express an interest in Science, Technology, Engineering and Math (STEM), but just 0.3 percent of high school girls actually go on major in computer science.[1] Today, less than 14 percent of computer science degrees are awarded to women.[2]

To change the status quo, Girls Who Code is teaching girls like Ms. Rutaganira to program games and create graphics and animation. Participants also go on field trips to companies like Zynga, Pandora, and Intel to witness technology's real-world applications. "We got to see people working with our own eyes, using codes. That's when it really hit home that we could use codes in our daily life," says Ms. Rutaganira. The program has been so successful that after Intel launched the first university model of Girls Who Code at the University of California–Davis, it joined forces with The Clayman Institute to bring Stanford sociology professors into the fold to teach voice and influence workshops in their 2014 summer program.

TURNING INTEREST INTO INNOVATION

As a final project for her seven-week stint, Ms. Rutaganira and two classmates created a flower-shaped app to help users remember when to take their medication. "It's called Petals to Pills and it was inspired by my classmate's forgetful grandmother," she says. At the program's conclusion, a female mentor from the program arranged a meeting between Ms. Rutaganira, Sacramento Assemblymember Richard Pan and San Jose Assemblymember Paul Fong in which she presented her project. "He talked to me about the problems Sacramento citizens were facing with healthcare and expressed some genuine interest in the app!" says Ms Rutaganira.

Seeing that programming is not the solitary endeavor that Ms. Rutaganira first thought it to be, she's excited about the creative possibilities. "I thought it would be harder, but once you put the time into it and realize how beneficial it is to your community and to the world, you find you're motivated to learn how to code," she says.

CREATING CAREER-READY GRADUATES

Technology education programs like Girls Who Code are proving to be transformative by equipping young people with the skills necessary to excel in the information age—which, in turn, stands to have a powerful impact on the economy as a whole. A recent Brookings Institute analysis found that, in early 2014, five jobs were available for every unemployed computer worker. And the Bureau of Labor Statistics projects that employment in STEM professions will grow 14.8 percent between 2012 and 2022, compared to 9 percent percent for non-STEM professions during that time.[3]

In fact, the job market for technology-based skills is so strong that some for-profit coding schools are pitching money-back guarantees. For Billy Shih, that was an offer he could not refuse when he found himself dissatisfied with his marketing job. Mr. Shih enrolled in a web-development boot camp at the Seattle-based Code Fellows, with the promise of tuition reimbursement if he didn't receive a job offer of at

least $60,000. After completing the course, the 29-year-old had three offers, with salaries up to $83,000—a $30,000 increase from what he'd been offered before participating in the program.

For Mr. Shih, having a bigger paycheck is gratifying, but job satisfaction is the real win. Now a web developer at the organic produce delivery service Full Circle, he says he's passionate about his work. "I'm really into environmental issues, and I believe in what [Full Circle] is trying to do in terms of getting people to eat real food," he says, "And I love that I'm building something rather than just selling something."

SUCCESS STARTS WITH ACCESS

For many young people, access to technology education makes the difference in their fight against poverty. Roberto Green dropped out of the University of Massachusetts in 2009 after his girlfriend became pregnant with their son. Although he worked three different jobs, including delivering newspapers, the 24-year-old was only earning about $12,000 a year.

A year later, he learned about Year Up, a nonprofit training program, from an organization called Bottom Line. In addition to soft skills like communications and networking, he learned how to use business software to conduct research in the financial markets and to refine his client-presentation skills. He subsequently interned at State Street Global Advisors, a Boston-based financial services company, where he is now a client representative earning four times more than he had been.

Perhaps most important, the program has motivated him to continue to develop new skills and to work toward a brighter future: "It allowed me to get my foot in the door, and I've been pushing that the door open wider ever since."

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1. http://www.nature.com/scitable/content/chapter-1-women-and-girls-in-science-18040707

2. http://www.esa.doc.gov/sites/default/files/news/documents/women_in_stem_a_gap_to_innovation8311.pdf

3. http://www.bls.gov/soc/Attachment_C_STEM.pdf