STEM

Hack Club!

High school students have started taking charge of their own computer science education. One of them, Zach Latta, an 18-year-old who was named to Forbes' "30 Under 30" list for 2016, has helped to create a network of coding groups ("Hack Clubs") that have spread to 12 states and six countries so far. The purpose: to get kids coding regardless of background or prior technical knowledge.

- By Greg Thompson
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While the familiar "maker movement" tends to focus on manipulating three-dimensional objects, the burgeoning "hack culture" is making its mark primarily in 2D. Also known as "coding," the act of "hacking" is merely solving a problem through the use of any and all computer programming languages.

High schools in the technology-rich Silicon Valley have long nourished a variety of computer science courses, but coding is making its mark in the school club category. Instructors looking to encourage students to start coding clubs can point toward entities such as San Francisco-based Hack Club, a nonprofit that helps high school students start coding clubs with pre-built curriculum, free of charge.

Zach Latta, co-founder and executive director of Hack Club, has grown Hack Club to 52 schools so far, and he is intent on continuing to grow that number. The success of Hack Club comes in part from its quick-start mentality that engages students from the first meeting.

Zach Latta

"If you're a new club member, by the time you leave the first meeting, you have your first Web site online," explained Latta, an 18-year-old who was named one of Forbes' 30 Under 30 (Education Category) in 2016. "By the second meeting, you've built a Web site that can call and text your phone. By the time you've left the third meeting, you've built your first game, and it's
online, and you can show your friends."

**Getting Started**
A Hack Club starts like any robotics team or chess club, with most schools requiring a "teacher sponsor" to donate a classroom after school, generally twice a week for 90 minutes. "Once you have a physical space, all you need to do is recruit students," said Latta. "Generally we see about 40 people at that first meeting."

Hack Club has a sizable online presence, and students typically lead the way in on-campus club formation. Brent Smith, an AP Computer Science teacher at Los Altos High School (LAHS) in California hosts Hack Club in his room where computer equipment is already set up and ready to use. "Students started with simple things like HTML, then CSS," he said. "Then they want to start working with JavaScript in the second half of the year. It has been a good progression."

Classes devoted strictly to coding are few and far between at this point, but Smith said he sees students using what he calls the "conceptual aspects" of computer science (JavaScript and more) in club projects. "I could see how some kids would want to just get out and apply things," said Smith, who also teaches mathematics. "They get interested when they can do stuff that they play with every day like the games or apps. We've been just starting to talk about a course where they can go and program. It does not exist right now."

Over at Mountain View High School in the same district as LAHS, coding is instead given its own event. Dubbed the "Hour of Coding," the occasion comes every October as part of the Northern California school's STEM Week event.

"We work with the math department in setting aside one hour of class time to introduce students to what it is like to write computer code," said Ly Nguyen, a 12-year teacher of Computer Science. "The goal is to break any misconceptions and fears that students may have about computer science. Without this, many students may never experience what it is like to write their first computer program. We have trained our current computer science students to act as peer mentors. Through the 'Hour of Coding' experience, we hope to inspire students to pursue classes and careers in STEM-related fields."

**Only a Brain Needed**
The terms coding, hacking and programming are interchangeable these days, but Zach Latta maintains that "hacking" is favored by Silicon Valley professionals currently working as coders/programmers. It's one of the many reasons he uses "Hack Club" as the name for his venture that touches more and more lives with each passing month.

Matt Hesby, a teacher in the Summit Public Schools of California and Washington, is part of an "expeditions team" that teaches electives to students. Hesby rotates between three high schools
and one middle school, teaching Intro to Computer Science. He has seen the Hack Club phenomena first hand, primarily as a way for students to apply what they are learning.

"Programming in general is a great idea for students," said Hesby. "It helps them focus their other skills; it lets them build things and get excited about using the skills and knowledge they learn in other classes; and it's something that will be part of their lives in the years to come.

"Hack Club is great because it can be difficult as a teacher to create a class that fits the requirements of being a class, such as grading and assignments, but also is open enough to allow students to explore and learn and build at their own pace," continued Hesby. "Hack Club is creating a space for students to explore and learn in a way that focuses on making and building, which can really draw in students who would otherwise be turned off by the intensiveness that programming classes normally require."

Bogdan Vitoc, a 17-year-old senior and leader of a Hack Club at Cherry Hill High School East, Cherry Hill, NJ, has long been attracted to the creative nature of coding, and he met with Latta and Hack Club co-founder Jonathan Leung during a trip to the Bay Area in February 2015. Latta and Leung stressed the lack of technological barriers and the sheer potential of the virtual landscape.

"All you need is a computer and some ingenuity to solve computer science problems and create tech businesses," enthuses Vitoc. "Hack Club is great at creating resources to get beginners excited about programming. Unlike lots of other online tutorials, Hack Club's workshops are great at teaching beginners how to teach themselves, rather than blasting them with information. I'm on the curriculum design team with Jonathan Leung, Harrison Shoebridge, and a few others. We strive to make the workshops very self-paced, and emphasize the importance of finding solutions on your own."

The self starter mantra is echoed by Cindy Zhang, a 16-year-old junior at San Mateo High School, San Mateo, CA, who said she likes coding because it offers the freedom to try what she wants, and the satisfaction of getting her code to actually work. Zhang already knows R, C++, JavaScript and HTML/CSS but occasionally struggles to effectively put them all together. "And the minimum technology that you need to start coding," she said, "is nothing but a laptop, a brain, and a desire to learn."

"One of the coolest things is that the entire 'virtual tool box' for coding is almost completely free," adds Latta, a recent winner of the Thiel Fellowship. "Anyone from a student with no money, to a professional at Facebook, has access to the same tools. Ultimately, hacking is about using all the tools at your disposal to build a solution to a problem."

Read our related Q&A with Zach Latta here.
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