

CASE STUDY

Early Morning Coding at Impact Academy

Introduction

At 7:30am, over an hour before school starts, you might expect to find most high school students somewhere between their bed and frantically finishing last minute homework assignments on the bus ride to school. So you might be surprised to walk into Denise Huey's 0 period class, where instead, you would find every seat filled by a student diligently working away on a Chromebook, learning to code.

What could possibly motivate these students to drag themselves out of bed so early? Much of this has to do with the school's welcoming environment. Denise's classroom is alive; the walls are adorned with a wide range of posters, from musical artist Murs and the Vagina Monologues to posters displaying affirmations for students that might feel marginalized or forgotten. When you are in her classroom, you can feel Denise's passion for social issues, her city, and most importantly, her students, shining out from the walls.

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- Denise Huey

The classroom is one of many like it at Impact Academy of Arts and Technology. Impact is a small, charter high school serving a diverse student population in Hayward, about 1.5hrs southeast of San Francisco. Impact's mission is a bit different than other schools— it's not just about earning a diploma, it's also about what comes next, which will hopefully be working towards a degree at a 4 year institution. There are reminders of this everywhere—college pennants adorn the walls next to the posters of affirmations and interests that Denise and her students share, and students are split into small groups with names like 'Santa Clara University' and 'UC Santa Cruz.'

The school tries very hard to foster relationships between the students and their teachers, with the belief that teachers can be positive role models that encourage students to pursue education further. Classes are a lot smaller than they are at your average high school, and that allows more room for mentor-mentee relationships to develop. Teachers are able to connect more deeply with their students so that they can focus on things like critical thinking and problem solving, working in groups, and leadership skills instead of simply passing a class.



Impact got involved with Computer Science at the request of a passionate principal. Denise was tapped to lead the course because she had a fellowship with Industry Initiatives for Science and Math Education, a group that places STEM teachers into industry careers so that they can get an idea of what working in STEM is like, and bring that back to their students. The principal reached out to her and got her all set up. She was nervous at first—she has no computer science background other than the fellowship and a little dabbling with Python. However, this initial nervousness gave way to a breakthrough—she found that being honest with her students about the fact that she was struggling through the material just like they are, motivated them to work hard, and work together to find the answers.

Denise sees the students using technology in so many different ways, whether it's taking advantage of new communication channels or idling on social media, and so she tries to inspire them to think about what is going on in the behind the scenes, so they can start to think about how things work, and get straight to building them themselves. She combines this passion for connecting her students to real world outcomes with her school's goal of getting students into 4 year universities by prompting the Introduction to Computer Science students to decide if this is something they'd like to pursue further, and her AP CS students to realize that they can and are already handling college level CS work.

If you ask Denise, she'll tell you that CodeHS played a huge part in helping her be successful. She likes that students can connect to the concepts at the heart of Computer Science with Karel the Dog—"it helps them figure out the end game, and they really like that." She also was able to complete the CodeHS PD course—"I can't say this enough—the Professional Development Course—that whole thing is just wonderful. The fact that you guys talk to teachers and get feedback—it's amazing. Especially for teachers that are figuring out how to teach coding. It's different. I know how to teach math, I know a whole lot of different protocols to get students involved. CS is different. The PD course gave me a lot of ideas to get students involved. It's ok to have students struggle. It was really good for me to see what it is like. Going through all of it was a breath of fresh air."

Towards the end of our talk, Denise related the story of a student of hers, a young Latina girl who would come in, do her work quietly and leave without much fanfare. Denise assumed she was just going through the motions, and that her parents had forced her into the class—that is, until the student's older brother came to tell Denise about how she had come home every day to show her brother and mother about the work that she had done coding, and all of the new things that she could do with Karel the Dog.

Denise's class is a great example of what can happen when a passionate, capable teacher can get her hands on the right tools!