CodeHS

CASE STUDY

From Shakespeare to Coding

Introduction

Sixteen years ago, Andy Walleck spent his days teaching English. At home, he tinkered with computers and technology, but at school his classes were filled with American Lit and 10th grade student essays. Twelve years ago, J.C. Harmon High School, the school he still teaches at today, needed another teacher to teach a Cisco networking class for routers. There was only one computer teacher at the time, so his administration asked Andy if he wanted to get trained. He said yes.

Back then, the school offered a couple of computer-related classes. In addition to Andy's networking class, students could take a web design class, learning to create simple web pages in HTML. That was pretty much it in the way of coding. It was 2003. Andy's course load evolved, he started teaching a computer repair class. Eventually, Shakespeare became less and less of his curriculum.

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>
> - Andy Walleck

Andy remembers being called in for a meeting at his district office ten years ago. The Instructional Technology Coordinator posed a question: "What would your classroom of the 21st century look like?" One of the (then unrealistic) ideas bouncing around was: computers for everyone. An initiative where all students had a laptop. J.C. Harmon is part of Kansas City Kansas Public School District. It's in a low-income part of the Kansas City metro area, a Title 1 district where the vast majority of students are on free and reduced lunch and the test scores are low. The school district faces a myriad of challenges. The computer idea was a long shot to say the least, but the district agreed that they had to get technology into the hands of students because the students simply could not afford it themselves.

Two years later, they made it happen! By making technology a priority, the district rolled out a 1:1 laptop program in 2007. It was an incredible step towards providing an often underprivileged student population with a 21st century education.

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With computers in the hands of the students, it immediately became clear that while they were really good at using the technology, they had no idea how to make computers do what they want them to do. After making the leap with the hardware, the next challenge was figuring out how to inspire kids to do great things with the technology.

The district wanted a more advanced curriculum in programming for its students, but no one knew how to teach that stuff. They came across CodeHS—a solution that they saw would allow KCKPS to teach programming, even though they didn't have the staff or resources to build their own computer science program and curriculum. The district asked Andy to take a look at it over summer.

Andy had tried to teach himself JavaScript out of a book he borrowed from the library a few years earlier. He never really got anywhere with it. With CodeHS, it was completely different. He wanted to learn the content himself; it was fun, well laid out, and as a web-based tool, it was easy to get started and keep going. He could see this working in his classroom.

The first year that J.C. Harmon High School used CodeHS, Andy incorporated part of the curriculum into an introductory computer applications class that he was already teaching. This allowed students to get some exposure to coding in a class they were already signed up for and it meant that the school didn't have to create an entirely new course. This school year, Andy uses CodeHS in both that intro computer apps class and an intermediate class focused primarily on programming. In the intermediate class, students work through the more advanced modules of the CodeHS Introductory Computer Science curriculum.

On a typical day, the class begins by watching videos together, working through a programming demonstration as a class, and asking questions of each other and of Andy. Then, the students begin working independently through the curriculum. Using CodeHS in this way, Andy creates an environment that encourages both ownership over student learning and collaboration between students and the teacher. He says that students love Karel the Dog, and the individualized nature of a self-paced program is great for his classroom, where there are students of all skill levels.

When it comes to offering other teachers advice about teaching programming with CodeHS, he says one of his biggest takeaways is patience! Be patient, and be sure to set aside time to work through the curriculum. Working through the entire curriculum and really getting to know the content himself has allowed Andy to lead great classes and engage more students in computer science. Andy also suggests something that might be uncomfortable for some teachers, but is really important when it comes to teaching computer science: don't be afraid to troubleshoot in front of students.

> **I know that teachers are used to being the authority figure in the classroom, but you can still be an authority without knowing everything!**
>
> - Andy Walleck

A huge part of teaching computer science is helping students find and work through their bugs—sometimes it will take him some time to help students identify the problem with student code, but that's ok! In fact, using students as a resource makes class fun and engaging for students as students take ownership over their learning. Andy looks forward to building out the computer science program at J.C. Harmon, with CodeHS there to provide the guidance and support he needs as a starting off point. The future is full of exciting opportunities for students, linking the in-class experience of learning to code with internships in industry. We can't wait to hear from Andy where he and his students end up!