Introduction: Expanded Programming Offerings

Analy High School, located about fifty miles north of San Francisco in the town of Sebastopol, CA, boasts a student population of about 1,200 students. The public high school has been listed in Newsweek Magazine’s “Top High School List” multiple times throughout the past several years. Seeing a need for more computer science curriculum, math teacher Walt Hays designed a Beginning Programming class for the high school students. Hays had some programming experience already, learning BASIC himself as a 6th grade student and coding scripted languages while working in high tech at a software company. Enjoying teaching the programming class, Hays decided he’d like to add a more advanced class in Java, considering AP CSA.

At a programming and math teaching conference, a fellow teacher showed Hays Edhesive’s curriculum, describing the program and sharing some of the videos. Hays quickly got in touch with the Edhesive school program management team and began to trial the curriculum.
“I was a little bit daunted at the idea of having to teach Java for an AP class, but the MOOC did two things: first, it taught Java, and second, it made me feel confident that I could teach the class. I would not have just jumped in without it,” informed Hays. After creating his account on the MOOC in December, he binge-programmed all through winter break, and quickly managed to get the program approved by the school board for the following year despite the era of budget cuts happening in the district. During evaluation after the first year with Edhesive’s curriculum, with support from Superintendent Dr. Steven Kellner, the program was renewed by the district for three years.

Implementation and Success at Analy High School

For the first year, Hays worked through the curriculum alongside his students. “For me, even knowing a bit of coding, I did every assignment and every exercise all year. Even if I knew the exercises already, I would do them all. Completely. It was my first year teaching the material, and sometimes it would be harder than I thought," he described. Today, in his third year of teaching Java, Hays supplements the curriculum with his own in-class assignments. “I still really appreciate the MOOC because it has all this built-in practice. The content delivery happens without me doing it. It really frees me up to walk around and help student when they’re stuck.” This year, Hays has perfected his use of the MOOC to construct the most effective class for his students, relying on it about 60% of the time while providing in-class papers and assignments the other 40% of the time.

Hays also finds that his students appreciate the independent nature of the course structure. “They can work at their own pace, on their own time. Some students go ahead and get everything done quickly, and others are slower. They can watch the videos as many times as needed. Even if they’re sick and at home, they can still participate in the course.” The teacher also highlighted the benefits of the structure for himself, noting that the curriculum design is already laid out and organized. "When you know how to program in one language, other languages come into focus quicker. So many things are similar, and background makes it so much easier. I probably could have done it without Edhesive, but I wouldn’t have," remarked Hays.

Learning to program can be a process. “Sometimes, students will complain when they receive a lower score than they believe they should on an exercise. Once they go back and look at it, however, they realize that they’re missing a period somewhere. Once they fix it, they have a 5/5. It’s important for them to understand how to follow-through and correct their own mistakes,” he explained. A student from last year’s class at AHS is now a senior, applying to study CS in college due to his enjoyment of AP CSA.
Reflection

“Edhesive’s curriculum is a fantastic tool to help teach AP CSA,” relates Hays. Even with his programming experience, the teacher found that Edhesive’s MOOC provided the jumping off point he needed to feel comfortable teaching Java for the first time. “Computer science is behind everything that’s happening in the world these days; it is helpful in any field. Taking computer science courses is critical for students’ success today,” imagines Hays. “Students are challenging themselves with a college-level programming course that they would not have been offered without Edhesive’s support.”

Outcomes at Analy High School

- After the success of the initial year with Edhesive’s curriculum, the district renewed the AP CSA program for the next three years.
- Students are learning to check their work and follow-through on assignments in their programming activities.
- A senior at AHS is applying to study computer science in college due to his experience in AP CSA.

Highlights for Teachers

- Even for a teacher with a background in programming, Edhesive’s coursework is indispensable.
- The MOOC creates content and immediate feedback, freeing up the teacher for more student-to-student interaction.
- The coursework allows independence, catering to students of any skill level.

Edhesive makes online learning accessible, personal, and meaningful. We combine online instruction from nationally recognized experts with the personal support of local teachers, who offer students face-to-face guidance and support.

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