Historic Miami high school attracts students and increases opportunity through CS education

Most of the students who took the AP Computer Science (CS) Principle's course—the first of its kind in Booker T. Washington Senior High School's 95-year-history—had never tried CS. Many mistook the subject for a class on hardware repair or the history of the internet. But within days, these new-to-CS young people began to code, understand what makes everyday technology work, and collaborate to innovate new solutions.

> *I had never tried computer science, so the fact that I could create an app on my own felt amazing. This class allowed me to think I can actually go to college and major in computer science."* ~Yamil Rivera, a student in a CS class

The challenge: Attract and retain students

In its long history, Booker T. Washington has withstood hurricanes and even racially based attacks; its latest challenge has proven to be dropping enrollment. With fewer students attending, the school lost funding—and several teacher positions.

The Miami high school serves neighborhoods that are struggling economically. The area around the school faces the highest rates of unemployment and lowest annual income in Florida; the school also educates the highest percentage of students in Miami-Dade County who are houseless or transitioning homes.

Kevin Lawrence, principal at Booker T. Washington, points to the school's 98 percent graduation rate as evidence the school culture encourages young people in spite of challenges. "People look to this school as a symbol of hope and aspiration for the next generation," Lawrence says. "We're working to reclaim our place as a center for academic excellence and achievement."

Families in the area can choose the high school students attend. So, school leadership went looking for ways to attract more students and further raise the caliber of its education while working within limited budgets and fulfilling state-mandated course requirements.

"When we provide computer science education to kids and help them build a love and passion for it, we're not only changing this community. We're changing the world."

– Principal,
Booker T. Washington Senior High School

Why CS? Engage and equip students

The importance of technology today (and the future) means that the skills CS teaches will help young people thrive in the 21st century. CS is not offered in many of the area's high schools. School leadership thought adding the subject would attract Miami families hunting for opportunities to expand students' access to a subject needed for success in the digital economy.

Why TEALS? Growing a new CS program

Administrators at Booker T. Washington knew they would need outside support in order to offer a new elective. Robert Fox, who now teaches CS Robert Fox, had taken a CS class supported by Microsoft TEALS when he was in high school, so he knew firsthand how transformational it could be.

"I ended up studying computer science in college. I never would have even been exposed to it had I not taken TEALS in high school," remembers Fox, who championed bringing TEALS to the school.

Booker T. Washington decided to partner with TEALS for these benefits:

- **Instructor support.**
  Volunteers help new-to-CS teachers to the extent they need, from teaching topics instructors are still learning to supporting grading.
- **Strategies for inclusivity.**
  The program provides schools and teachers with resources to teach CS in an inclusive way and recruit students who reflect the demographics of the school.
- **Growth at the school's pace.**
  TEALS supports introductory CS as well as advanced placement classes, so it can help schools grow course offerings gradually. In their second year of working with TEALS, Booker T. Washington is adding a second TEALS-supported CS class.
- **Planned independence.**
  TEALS is designed to build a sustainable CS program, with schools "graduating" to teach CS courses independently over the course of several years.

"We lean on each other to make sure we can provide the guidance, support, and resources students need to learn computer science."

– Britney Thompson
TEALS volunteer at Booker T. Washington

How does TEALS work?

The Microsoft Philanthropies Technology Education and Literacy in Schools (TEALS) Program is designed to provide high school students with equitable access to CS education and create a pathway to economic opportunity. It matches professional volunteers with new-to-CS educators, who work together to teach and develop CS programs where they didn't exist before.

Impacts of CS education: "Ripple effects"

Among the students in Booker T. Washington's TEALS class, most had never tried CS before. "This class introduces students to careers they didn't know existed and gives them skills they can use in whatever path they choose," Thompson says.

Impacts on students	Impacts on the community
Inspire students. "There's so much creativity in computer science—you can do and make anything," says TEALS student Andrés Sarmiento. "There's no limit. It allows you to be you."	**Increase enrollment.** "When students at another school hear about this program, they want to go here to do computer science, too," Lawrence says.
Teach problem solving. "When you're coding, there are many possible solutions," says Yuri Palacios, a TEALS student at Booker T. Washington. "You can use that in life, too."	**Improve economics.** Students are impressed by the career and income options CS enables. "Computer science education bridges the technical gap and the future pay gap," Thompson says.
Earn college credit. "For me, taking the AP test was a personal challenge," says Palacios, who plans to study aerospace engineering. "If I get a 5, I can use that credit for college."	**Create a CS pipeline.** "Siblings and cousins see senior high students learning computer science. It has a ripple effect, helping younger kids develop an interest," Lawrence says.

Promising practices for CS education success

Offering a new subject, especially one in which teachers don't already have an expertise, can be a challenge. Leaders at Booker T. Washington are eager to share what has helped the success of TEALS at their school.

- ✓ **Find a passionate advocate.**
- ✓ **Get referrals from other teachers.**
- ✓ **Connect CS to students' lives.**

When asked for parting words of advice, Lawrence had this to say: "Kids here, and kids elsewhere, are facing battles—but programs like TEALS can change the trajectory of where kids can go. If TEALS can work at Booker T., it can work anywhere."

How to bring TEALS to your school

1. **Apply** at Microsoft.com/TEALS
2. **Interview** to ensure your school is a good fit
3. **Collaborate** with volunteers matched to your school
4. **Learn more** at https://aka.ms/TEALSschool
5. **Reach out** to your local regional manager for more details at https://aka.ms/contactTEALS