

## JIMU ROBOT IMPLEMENTATION IN NYC PUBLIC SCHOOL BOOSTS CONFIDENCE AND LANGUAGE SKILLS IN ENGLISH LEARNERS, LEADING TO ACADEMIC GAINS



PS 182, or The Bilingual/Bicultural School, is a K-5 public elementary school in New York City’s District 4. As its name implies, students who attend The Bilingual/Bicultural School represents the city’s vast diversity—over one-third of the fifth graders are English Language Learners or Former ELLs. These students struggled on city and state English language arts (ELA) exams, scoring below the city average the previous year.

District 4 superintendent Alexandra Estrella allows her schools to articulate and design their own unique approaches to STEM education. Yazmin Perez, the principal of PS 182, focused on the robotics component of STEM, using it to expose kids to programming, create teamwork experiences, and give English learners more opportunities to speak and engage with their teachers and peers.

Thanks to a partnership with City in the Community (CITC), a nonprofit foundation supported by New York City Football Club that uses the power of soccer to promote health, education, and leadership development, PS 182 implemented UBTECH Education’s JIMU Robots in its fifth-grade classrooms.

“From our perspective, JIMU Robots offered kids

the ability to engage in group engineering and problem-solving activities using fun and exciting tools that allow them to learn both complex social and analytical skills,” says Estrella.

### PS 182 LAUNCHES JIMU ROBOTS IN FIFTH-GRADE CLASSROOMS

CITC’s program combined after-school soccer with in-classroom robotics. Students worked with JIMU Robots every Friday learning the basics of coding the fundamentals of soccer; and essential skills like organization, teamwork, play, and delegation; in preparation for a robo-soccer derby event with other area schools.

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–Yasmin Perez

For most of the students this was their first time engaging with robotics. “Students were fascinated with the robots,” says Perez.

After just a few weeks, Perez started to notice changes in the students, particularly their language and communication skills. She believes that through engagement with JIMU Robots, the resulting student collaboration and discourse helped English learners—even those who’d struggled with traditional reading,

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writing, and speaking assignments—find their voice.

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English learners were demonstrating collaboration, discussion, and critical thinking skills; they were building their own robots and demonstrating their creativity. They began to use more high-utility terms, and in context; vocabulary expanded quickly and comprehension improved; and the results were showing up in their writing as well.”

## THE RESULTS

Despite performing below average last year, PS 182’s fifth-graders surpassed the city average on ELA and math tests.

MATH		ELA	
PS 182	62%	PS 182	73%
NYC DOE	61%	NYC DOE	70%

Perez and Estrella both believe the robotics program was a key ingredient. “The only difference from the year before was the implementation of this program,” says Perez. “Many students struggled with language acquisition, and communication skills, and the robotics program provided opportunities to build communication skills and acquire language.”

“When we look at the data for that school, grade bands using the robotics have seen significant gains in the state ELA exam, and we attribute that to the conversations kids are having,” says Estrella.

“We’re very happy that robo-soccer kids are positively impacted outside the program,” adds CITC’s manager of community development, Prospero Herrera. “They’re building relationships they wouldn’t have built before, and they’re developing leadership skills.”

Every year the City in the Community Foundation invites kids from all five boroughs to a celebration and soccer tournament. This year it added its first ever robo-soccer derby, which used JIMU Robots. PS 182 students participated and ranked in the top five. “That’s amazing considering it’s their first year competing,” adds Estrella.

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## WHAT’S NEXT

Working with JIMU Robots helped PS 182’s educators see how robotics and STEM education positively influences other core subjects, particularly ELA, because it develops linguistic skills and encourages students to engage in more academic dialog. Now the school is expanding their robotics program to include grades 3 and 4. In addition to JIMU Robots, the school is launching UKIT Intermediate, along with UBTECH Education’s NGSS-aligned UKIT curriculum.

The school is also working on an assessment that will measure the efficacy of their robotics programs. “In general, English learners are more reserved and don’t advocate for themselves,” says Perez. “Our robotics program boosted our students’ self esteem, giving them the confidence and skills to share their thoughts and ideas. Now we want the data to prove that introducing robotics programs and principles early on makes a real difference.”

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