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BOCES Robotics Class Is Changing Lives at Peekskill High School

Yorktown Heights — Move over basketball. Peekskill High School is gaining a name for itself as a robotics powerhouse.

The robotics classroom at the high school is lined with banners announcing regional and national contests and a growing collection of trophies. But what’s really happening in the robotics lab is changing the lives of students.

“It let my creativity run through the roof,” said senior Cesar Culajay, one of 40 students taking robotics this year. Others credit BOCES robotics teacher Carlo Vidrini with setting them onto the path of success. “Mr. Vidrini really put me on the right track,” said Tarique Cummings, also a senior.

In a unique arrangement with the Career and Technical Education Center (CTE) at Putnam | Northern Westchester BOCES, four robotics classes, taught by a BOCES teacher, are offered at Peekskill High School.

BOCES first offered Robotics at Peekskill Middle School five years ago, and the program later moved to the high school, with BOCES’ longtime robotics specialist Carlo Vidrini embedded in Peekskill. The program has become a mainstay of the high school curriculum offered to any and all students and has a loyal following. Several members of the student cohort that took that first middle school class stuck with it, and are now seniors, participating in their fifth year of robotics.

“This is a different type of high school class,” said Vidrini, explaining that Peekskill robotics is about preparing for regional and state robotics competitions held in the winter and spring. This year’s contest tasks students with developing a robot capable of building a Lego-like structure with 5 by 8 inch plastic blocks. The challenge: the robot cannot be taller or wider than 18 inches and must be capable of stacking blocks up to 4 feet. The tallest structure wins, and a robot capable of crawling under a 12 inch bar gets extra points. In creating their robot, students follow the engineering process from brainstorming, to design, to prototype and patent development, carefully documenting their process for review and fine-tuning.
The day of the competition brings a lot of anxiety and stress. “We’re all nervous,” says Tarique. On the day of competition, the students have to defend their design to a panel of judges but can only watch as their programmed robot goes through its paces.

Vidrini notes the dedication of his students: “They come to the robotics classroom during their free time, often staying long after school has ended and spending time on weekends from September to January prepping for the challenge.”

Their commitment pays off. “The last three years we won several trophies and last year took the Yonkers Riverside High School Robotics Tournament beating out 32 other teams,” Vidrini said, noting that his program’s budget is significantly tighter than that of most in the competition. The students are clearly learning a lot more than robotics. Life skills, like teamwork, initiative, persistence, and presentation techniques all come into play. Cesar values those soft skills: “Whatever you end up doing, knowing how to think things through is going to be important.” It also forces students to come out of their shells, explains Tarique. “Engineering kids tend to be shy.”

Four of the six seniors in advanced robotics this year are planning to pursue engineering in college, but the whole class agrees that the program has set them up well for whatever lies ahead. Tarique plans to attend North Carolina A & T to study electrical engineering. Yemily Conde is headed to a career in physical therapy, but credits robotics with getting her ready for college. In testament to its team, Peekskill High School has been selected for the past three years to host the qualifier tournament of the US FIRST FTC competition, one of the highest regarded competitions in the state, and the robotics students were charged with organizing the event that attracted 600 people and 32 teams from as far away as Plattsburgh.

Under Vidrini’s guidance, CTE’s robotics program at Peekskill High School has done more than change the direction of students. It may have changed the direction of the school itself. Largely as a result of the success of the program, the Peekskill City School District plans to construct an entire science, technology, engineering, art, and math (STEAM) floor, revamping the existing space to provide state-of-the-art STEAM facilities. The improvements are part of a capital project approved by voters this fall. As seniors this year, Tarique and Yemily won’t be around to benefit from such an investment but worked to promote it, speaking at town hall presentations about the capital project, about the value of a rigorous STEAM program.

“We hope that upgraded facilities will motivate more students to participate in this program: a lot of kids don’t know about this, even those interested in engineering, so we hope they’ll come down and learn what it’s all about and broaden their options,” Tarique explains.
For Vidrini, the new wing will further his hope of creating a legacy.

“These students, this community deserve only the best. The rigorous curriculum currently in place is paving the road for them toward a bright future,” he said. “Several graduates are already in great engineering programs at schools such as the University of Rochester, University of Buffalo, SUNY Polytechnic, North Carolina State College of Engineering, to mention a few. It is worth pointing out that the growth and success of this program is mostly related to many parts working together; students, families, community involvement. Administration’s support is key, a special mention in this regard is for Mr. Arthur, principal at the high school, and Ms. Janice Reid, Director of Technology. Success is only possible when all these separate entities are aiming toward a common goal, sharing the same vision and values.”

It’s a sentiment shared by all the seniors, looking back on their five years of robotics. “I’ve got to develop a piece of me that I didn’t know was there,” says Cesar.

**From left: Mara Ordonez, Patel Pavan and David Brito with teacher Carlo Vidrini.**