Trinity Prep robotics students program future for success

By Kelly Allen
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Michael Paulauski controls robot "Squidward" while classmates Alexia Haralambous and Mary Flannery watch.

WINTER PARK - Squidward the robot can pick up a volleyball, carry it to a wall, and drop it on the other side. Squidward, named for the squid-like "nose" on its claw design, is the only robot in Florida that can do this.

And although its design is simple, this robot won best design at a national tournament in the fall - a victory for a robotics program in its inaugural year.

Trinity Preparatory School's robotics program, which includes middle school and upper school classes, prepares students for the computer science and engineering fields.

By building, programming and competing with robots like Squidward, students learn and apply real-life skills that they might not otherwise receive until college.

Many of the seniors in Susan Frederick's upper school robotics class have taken computer programming I and II, so they know how to write object-oriented computer programs and can make sense of terms like structures, matrices, vectors and binary searches.

But robotics class takes this head knowledge and gives it hands-on application: Build and program a robot that can get balls from one side of an arena to another.

Teams get points for things like autonomous function, which means the robot is programmed to perform certain actions on its own without any remote control from the student.

Squidward was able to autonomously move to the wall and push four small foam balls through a hole in the wall using a plow-like attachment on the front, earning 20 points before the round started.

Trinity Prep competed in two world-qualifying robotics tournaments this year. At the first, the VEX Robotics All-Star Challenge at Disney's Wide World of Sports in November, the team received the best design award for Squidward. Judges said the design was "simple but efficient," Frederick said.

At Battle By the Bay in Tampa on Feb. 20, Trinity's second robot, "Spaz," received the best design award. The November competition was national, while the February event was limited to Florida schools.

While Trinity did not receive a world bid in its first year competing in robotics, the program is already ranked No. 2 in the state. Frederick said the students will compete again next month in a last try for a world bid before the school year ends.

Abid Hassan, a Trinity Prep senior who lives in Oviedo, said the class has taught the students teamwork along with technical skills.

"(The class) helps all of us because this also taught us a lot about teamwork," Hassan said, "because ... we have to team up with other robots, and we had to learn how to work with (other teams) and communicate well."

Senior Michael Paulauski has already been accepted to several computer science and engineering programs, such as the Carnegie Mellon colleges of computer science and engineering. Paulauski said he's had an opportunity to apply skills in this class that he never would have had otherwise.

"I've always had this little tinkering kind of side," Paulauski said, but he didn't have the materials to try the things he has tried in class.

"... Trying to solve problems is just a lot of fun. It's really fun to see how you can apply different methods to solve a problem."

Frederick, who also teaches computer programming, computer science, graphics and online courses, said robotics is one of many classes at Trinity Prep aimed at giving students practical application.

"A lot of our courses are project driven, so not only do you get the book learning where you can have discussion, they have practical application and that helps so much," Frederick said. "They were in here every day saying, 'I can't believe this is a class!' "

The robotics students will glimpse future possibilities for their skills as Trinity Prep partners with UCF's College of Engineering and Computer Science.

UCF students will demonstrate their more complex robots and give Trinity students the opportunity to learn about the more advanced programming and mechanics.

Paulauski nodded confidently when asked if this class will help him in his college career. "Definitely," he said. "I did want to do something like this in college because they do a lot of robotics clubs and robotics classes, and it so helps to have this under my belt."