

Novi T O D A Y

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BUILDING INNOVATION

Novi Schools offers program not found anywhere else

Sixth graders in the Novi Community School District will receive special instruction this year that isn't offered anywhere else in North or South America.

Every sixth grader will receive one hour of weekly instruction in the Comau e.DO Learning Lab, which will enhance knowledge of STEM subjects through access to math, coding and robotics training. Comau plans to offer these learning labs in more school districts in North America in the future.

The unique robotics lab has been added as a fifth special at Meadows – joining art, physical education, world language and vocal music.

Six e.DO robotic platforms were installed in a classroom over the summer. The e.DO is a flexible, interactive open-source robot designed to stimulate creativity and participation inside and outside the classroom. The Industry 4.0-enabled robot is part of an open and modular ecosystem that helps educators deploy robotics to address a variety of interests and target groups as part of a modern and highly relevant didactical path.

John Brickey, principal of the Meadows sixth-grade house, said adding the robotics course was a no-brainer.

"This will unlock

learning for children who previously struggled with some concepts," Brickey said. "In my head, I just keep seeing more possibilities, more possibilities, more possibilities.

"The bones of the idea are very good and I very much have the mindset that if you work hard with a good idea behind you, you're going to get home.

"This is such a logical step to me with the students and community that we serve. As soon as I saw this, my

head immediately went to 'how am I going to make this work for kids?'"

Stephen Ernster, who has a background in product engineering, will teach the class. He previously taught fifth grade math and science.

"There's something for everybody," Ernster said of the class, which will be broken up into five units (Robotics, Math 1, Math 2, Coding 1 and Coding 2).

"In terms of the different types of learners, I think it has the potential of appealing to children who maybe love math and kids that, maybe



math is not their favorite subject, but it helps them visualize it more."

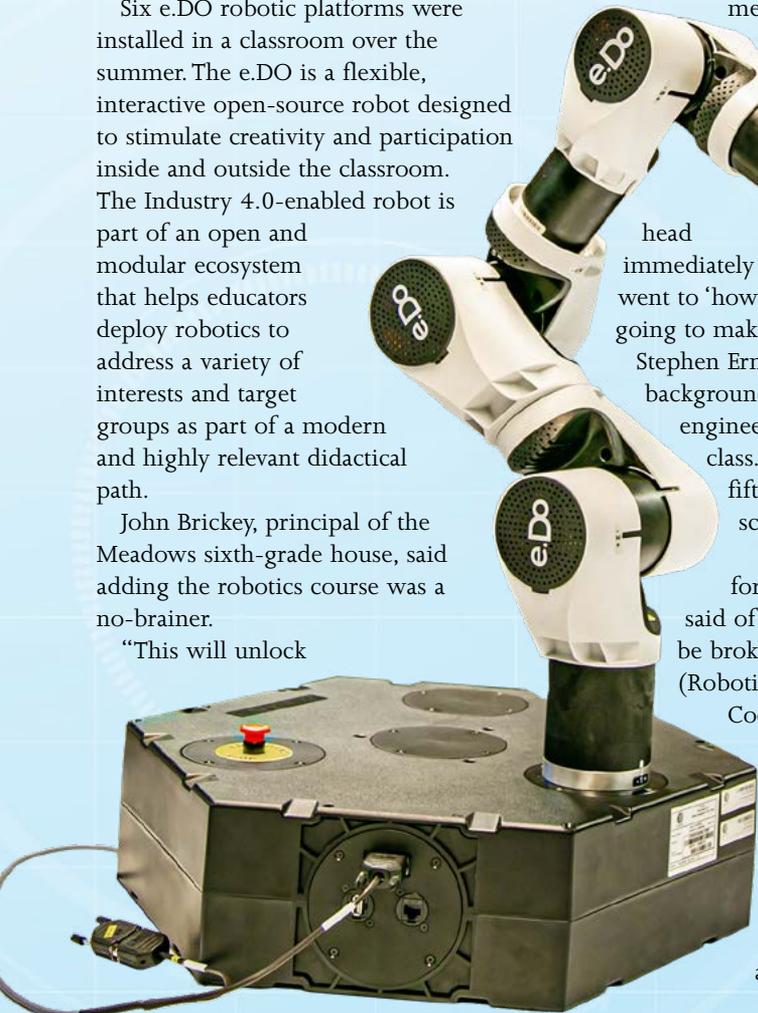
Ernster will teach robotics five hours a day, four days a week. He'll also teach a larger group one day a week, part of a rotating special each quarter.

Andrea Zucchi, a mechanical engineer and robotics education trainer for Comau, spent 10 eight-hour days training Ernster, Brickey and other NCSD staff about the e.DO robots.

"This is an amazing chance for students to have a lab like this," Zucchi said. "I think they're very lucky."

Although some schools in Europe have e.DO learning labs, Zucchi said it isn't common to have six e.DO robots in one lab for sixth graders. Some schools around Turin, Italy, where Zucchi is based, come once a year for a four-hour robotics experience.

"This is a very innovative way of learning," Zucchi said. "The world is moving towards robotics automation. So, the students will have to have this knowledge or at least know how to interact with (robots). They have to know how to get the concept of these machines because that's what they'll find tomorrow. The hardware can change. The software can change, but what makes everything move is the logic behind it.



“This is a really nice opportunity to have one hour a week of this kind of curriculum, this deep interaction with the robot and all these topics. It will be nice in the next (few) years to see how these students will interact with the world.”

The robotics course aligns with the learning goals the district has for students.

“The notion of this program embodies an ethos that we have here in the Novi Community School District, which is an equity of opportunity,” said Dr. R.J. Webber, assistant superintendent for Academic Services. “Meaning as many students as possible have the opportunity to have experiences that are not relegated to afterschool or clubs or so on, but that we give core experiences to our students.

“So, kindergarten through eighth grade – and actually K through 12 – is about making sure each student – every boy, every girl, a student with an IEP, a dual language learner – has an opportunity to really learn about computational thinking, to learn about coding, to experience the joy and wonder of struggle and success.”

From Kindergarten through fourth grade, NCS D students work with Curiosity Kits to learn about CAD (Tinkercad), Coding (Ozmo and Ozobot), 3-D printing (Dremel printer) and Computational thinking (Keva planks).

“Every fourth grader in our district does a paper circuitry and art piece,” Webber said. “We’re in our third year of that. Every fifth grader does the same.

“ [Students] have to know how to get the concept of these machines because that's what they'll find tomorrow. ”

**Andrea Zucchi,
Mechanical Engineer and Robotics Education Trainer**

“The past five years, our attention has been to the Next Generation of Science Standards, which now we have fully implemented in our district. And then sixth grade, what we’re talking about now is this e.DO robotics component.”

Comau has 32 offices around the world, including Novi, Royal Oak and Southfield. Comau’s e.DO Experience Suite offers an interdisciplinary approach to learning that integrates and consolidates key skill areas, including Robotics, STEM subjects, cooperation, communication, teamwork, creativity, as well as an introduction to competitive problem-solving, industrial culture and a results-based orientation.

NCS D’s relationship with Comau began in 2010 with a visit by Dr. Webber to their production facility on Grand River.



Comau became a stalwart supporter of the district, providing opportunities for students in the alternative education program.

Webber received a call in October about a potential opportunity around the e.DO Experience and “what I saw really fit with our vision perfectly.”

Zucchi led a demonstration with some of the e.DO robots for some fifth graders in November and came away impressed at their aptitude.

“I thought they were very smart, very fast learners,” Zucchi said. “The class I had in November, there was a few minutes of explanation and they were able to use (the robot). We want it

to be easy to use. Take the tablet in your hand and you can already imagine how it works, even if you haven’t touched anything.”

Webber believes the challenge next year will be to design a course of study at the middle school “that is

congruent with everything we’ve done K-6. At the high school, we feel we have tons of opportunities for the students to expand.”

Brickey is ecstatic about what he’s seen built at Meadows this summer. He and Ernster will have weekly conference calls with Zucchi, along with Darrell DuBay, who will be the point person in Novi for Comau.

“Comau has done so much work to get to this point, it’s staggering how much,” Brickey said. “We’re thought partners. We’re getting an amazing product and opportunity for kids. They’re getting a great group of kids to test it on and a terrific teacher to help walk them through it. It’s going to be a situation where a lot of people will benefit from this.”