

# Remotely operated vehicles: Technology in the classroom

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HOUGHTON - Remotely operated vehicles aren't something reserved for scientists deep in the ocean anymore. In fact, in November, a training class was held at Michigan Technological University for high school and middle school teachers to learn how to bring ROVs into the classroom.

"We were able to bring up Keith Forton from Traverse City, who has really been an innovator in using ROVs in his class," said Joan Chadde with the Western U.P. Center for Science, Mathematics & Environmental. "He really created this program that we're using in the state of Michigan."

The program includes teaching students about ROVs from the ground up, including letting students build them, learn how to use them and in some cases actually use them.

"Kids are so engaged when it comes to technology," Chadde said. "That's the hook. It's a great application for science, math and technology."

Chadde said the activities interest students in all grades.

"It's a hook for their interest," she said. "When they build it, it's not just built and done, it's then a tool that can be used for scientific research."

On a larger scale the vehicles are used to investigate shipwrecks. More locally, they can be used for a lot of different things.

"Michigan Tech had one out on Isle Royale (National Park) and they caught the first footage of a moose eating underwater," Chadde said. "Another common use is if a dock is corroding, they can use ROVs instead of a person to see what's going on."

The workshop was offered to teams of two or three teachers, and attracted teachers not only from local schools such as Jeffers High School and Horizons Alternative High School, but also nationally with a group coming in from Nevada and a teacher that works at the same school that President Barack Obama sends his children to.

"There was a lot of smiles," Chadde said. "The teachers seemed to thoroughly enjoy it."

Though the teachers enjoyed the experience, it wasn't free. Each teacher had to pay \$50, and that was after Chadde and Doug Oppliger worked together to bring in \$10,000 worth of grants to cover the expenses.

Half of the money came from a grant through the Michigan Space Grant Consortium, with the other coming from Square One Education Network.

"Michigan Space Grant Consortium is all about engaging students in science, technology, engineering and math," Chadde said. "They fund teacher professional development and student research."

The Square One Education Network helped because of their belief in hands-on learning.

"They promote getting kids hands-on stuff," Chadde said. "They don't want to fund someone's travel; they want to find the stuff that kids get to touch, because that's what they believe gets kids interested."

Dollar Bay teacher Matt Zimmer is already utilizing some of the methods taught in his classroom, something Chadde said he was able to do because he attended the same workshop in Traverse City last year.

"Students have had a very positive reaction to the class," Zimmer said. "They've been able to take the concepts and content they've learned in other science, or math, classes and apply it in a hands-on situation."

Zimmer is able to offer the class two of Dollar Bay's three trimesters, skipping the winter session where an ROV wouldn't be useful anyway.

"In the fall we had the students find local sources for materials, we put the ROVs together and got to test it on the canal," he said. "It's a lot of work for a teacher, but the students were engaged the entire length of time."

Chadde said the experience for teachers in Houghton was invaluable.

"Forton was a really dynamic presenter," Chadde said. "He was very motivating and passionate, he was a great example for the teachers."

Others in attendance at the November workshop included teachers from Ironwood, Marquette, Gwinn and staff from Isle Royale National Park.

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