

# Students Build, Battle Robots To Understand Manufacturing

Lugene Hudson, Associated Press Writer

NEW CASTLE, Pa. (AP) — The plan for being the best involves building a robot.

At Lawrence County Career and Technical Center, the best stands for Boosting Engineering, Science and Technology.

Students from various shops have been meeting with electronics instructor Barry Clever to construct a prototype operating robot. The timeline six weeks from start to finish.

On Oct. 23, the team of designers will vie for top honors in a competition at Grove City College, along with other schools from Lawrence, Beaver, Butler, Mercer and Erie counties.

Clever lives up to his name, passing along ingenuity and creativity combined with electrical and mechanical skills to the 13 students who are competing.

What BEST entails is producing a unique product for a pretend manufacturing industry using the most advanced robotic control systems available today, said Dennis Digianvincenzo, teaching assistant.

The criteria is specific. Factory constraints entail that the systems are limited to 24 inches on a side, weigh no more than 24 pounds and meet all construction requirements.

Besides building, complete technical documentation, marketing and advertising is required.

"We have to sell the product," Clever said. "We are literally making it from scratch and have to try different sizes to see what works."

Just as in a real manufacturing plant, some products could be recalled or considered defective and removed from the production floor.

The challenge is to solve a packaging problem for a conceptual company, Clever advised.

"We want them to buy our product."

"We are replicating a manufacturing process," Digianvincenzo said. "Manufacturing and robotics goes hand in hand. Robotics actually replaces manpower. However, manpower is needed to build, maintain and program the robot."

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The electronics class is a lot more difficult than people may think and testing is difficult, said senior Rachel Trimble, who is also president of the robotics project.

Everyone involved was assigned a role, she said.

"I have to make sure everyone is at his or her task and help people. There are only two seniors in electronics on this project," Trimble pointed out.

Kendra Sager, a senior in the auto tech shop, knows she will be working in a male-dominated industry.

But that's no deterrent.

"Give me parts and I'll put them together," she laughed.

The robotics work suited her perfectly.

"I enjoy working with other people and seeing how we can make wheels turn and so on," Sager said. "Electronics is tied into mechanics."

Students learn by doing and that includes mistakes, and also doing it correctly, Clever explained.

"It can be hectic."

A layout or perspective view of the manufacturing plant shows such areas as a pack and ship center, scanning tube, production floor, recall center, pallets and the robotic control engineer.

According to Clever, the college is sponsoring and judging the contest.

"These are great kids and they are fired up over this."

And in a few weeks, they'll learn if their robot is the best.

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