Doubling the Education Pleasure

Manufacturing Lab Meets Variety of Needs

By Tom Schuman

Preparing students for 21st century jobs is an increasingly challenging proposition. Try doing it in a 19th century learning environment and the task becomes that much more difficult.

Those days are gone at Seymour High School and in other high school learning labs in the United States and beyond that have partnered with Jeffersonville-based Amatrol. The company (Amatrol is short for Automated Machine Controls) is a leading producer of skill-based, integrated technical learning systems.

The result: Students earning simultaneous high school and college credits, and leaving school prepared to continue their education at the postsecondary level or enter the workforce with the skills necessary to be a productive employee. Dual enrollment and superior training are a combination that is hard to beat.

Amatrol President Paul Perkins (left) looks on as instructor Bob Sexton observes Seymour students Matt Decker and Bobby McIlquham working at the industrial plastics center.

Starting from scratch

When Bob Sexton came to Seymour High School in 1992, the lab area included "three colors of brown, a cement floor and lights that were noisy." When he tried to update some of the equipment, he learned that one of the supplying companies had been out of business for at least 10 years.

"It was a woodworking lab. We had two companies in town that did some woodworking and they were one-man shops," Sexton explains. "I had to talk about CNC (computer numerical control) and robotics when we were using a table saw and a big, huge planer."

Planning began immediately. Funding took a little while longer. But, by 1996, a modern, updated lab was in place with the curriculum materials to match. Enhancements since then have only improved the learning environment. The changes, however, go far deeper.

"I'm in the lab; we're here talking and they're over there working," Sexton points out as students focus their efforts at one of the many learning stations. "Students have changed too. They want to learn, and this lab is making those connections. Some of the older teachers say, 'they're not going to have a take-home project.' Once students get involved, programming is the take-home project. The program you can't feel and touch is as exciting as anything I built in high school."

Curriculum challenge

Sexton provided the drive and determination to make the necessary changes at Seymour. Amatrol was there to assist with the technical expertise. The company had worked in the education business since 1981, primarily in industrial training centers, community colleges and vocational schools. Curriculum development for the high school labs began in the mid-1990s.

"We wanted to develop a laboratory that would encompass a whole range of topics," recalls Amatrol President Paul Perkins. "We wanted to make it the front end of a community college program. Students could either be ready to get a job out of high school or move on to advanced study in college. Most of the equipment already existed. The key was delivering a curriculum."

The curriculum is flexible to meet the needs of a diverse student

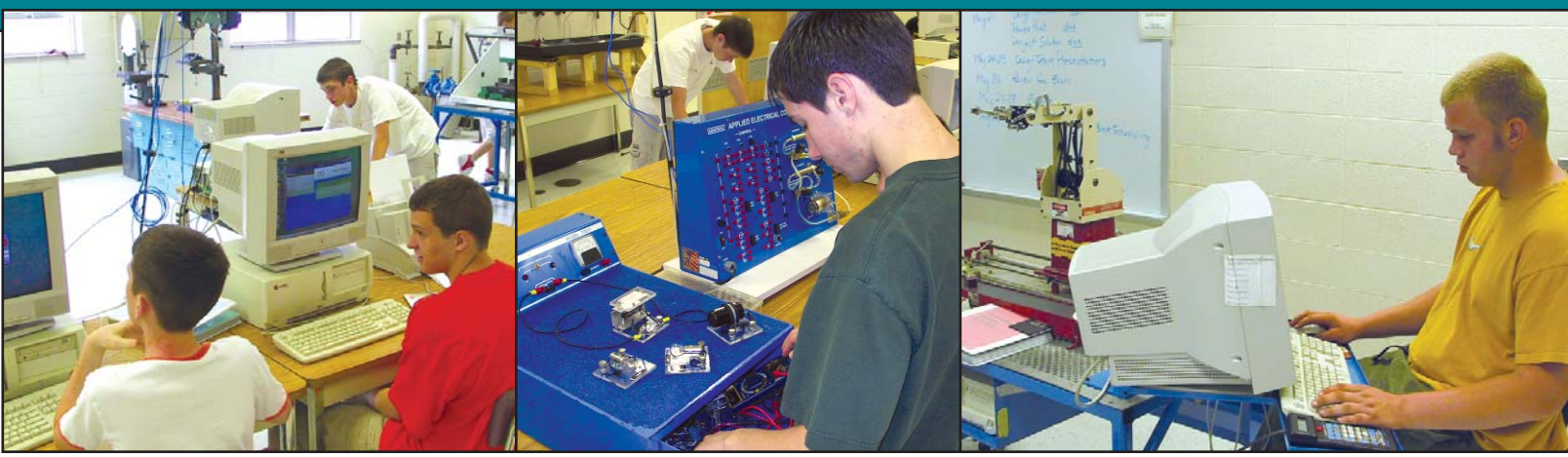
Seymour Manufacturing Lab

Project-based learning stations include:

- Industrial plastic center
- Design process
- Manufacturing processes
- Electrical systems
- Quality assurance
- Fluid power
- Automated material handling

An example of the type of work is the smart house construction sector project. The course description states: You work for SecureTile, developing and expanding its line of home and business security control systems. A prospective customer has a desire to build a futuristic smart house. You have been called in to work with the customer in developing a custom-made smart-house control system based on one of your company's existing security systems.

The challenge is to work in a team and use the seven steps of the design process to design and build an electronic security system. The work must meet various design constraints.



Computer and hands-on work in the manufacturing lab prepare Seymour High School students for postsecondary education or to enter the workforce.

body. Those who learn best by reading in a book have that more traditional option. If video or other multi-media options are preferred, no problem. All lead to hands-on work and team-based projects.

Sexton was one of approximately 40 teachers nationwide who provided input to Amatrol. He has been active in curriculum development on the state and national levels, and conducts teacher training in the summer as a consultant for the company.

"We pilot tested a lot of things here," Sexton notes of the early days. "We've taken the knowledge we learn from the various stations and apply it to projects. That fosters the team approach that industry loves."

Student benefits

Most students are also pleased with the program. Working in the industrial plastics center has energized Matt Decker and Bobby McIlquham, who recently completed the ninth grade. A little apprehension at first gave way to enthusiasm and a potential career interest for both.

"It took us two days to figure out how the make the mold work," says Decker, who expresses an interest in engineering. McIlquham, who lists aeronautical engineering among future job possibilities, touts the ability to make mistakes and learn hands-on.

The program benefits students at various levels of achievement. Applications from math and science carry over to the laboratory.

"It really attracts the upper-level students," Perkins theorizes. "It is motivational, takes their work to a much higher level if they've got a problem that they have to solve. It started as a program in manufacturing, but it's really pre-engineering. The academic rigor has been built in."

Sexton shares a number of success stories, including several students who were unsure about going to college. One recently completed a two-year post-high school program in 18 months.

"It gives students some options. "This guy wouldn't have made it four years," the veteran teacher claims. "They feed off each other too, trying to one-up the others in the class."

One student at a junior college e-mailed Sexton that his freshman work in robotics was too easy, that he had already done similar projects in high school. Another who keeps in contact with Sexton is in the midst of a bachelor's degree program at Purdue.

In the workplace, student and company matches are also proving successful. Sexton gets call from businesses looking for full-time employees and summer help.

Popular site

The Seymour lab has become a destination for those wanting to know more. A twist on the traditional student field trip the last two years has been bringing employers in for Industry to School Day.

Sexton says it has been an extremely popular event. "HR people love it. They're the ones hiring people and it familiarizes them with terms they don't know a whole lot about. We put students at the stations and they teach the adults."

Amatrol clients also want to see the company's products and services in action. The people who tour the lab, according to Perkins, "come away very, very impressed. They come in and see a wide range of technologies. They learn about transportation, communications, manufacturing industry sectors and how technology applies to careers."

Before the efforts of the Seymour lab, at least one Seymour company did not hire summer help. Now, college students, many who have gone through the manufacturing lab, are gaining hands-on experience while also assisting the business.

Moving ahead

While the Seymour effort is a success, more work needs to be done. Amatrol has more than 300 labs across the country and in Canada, Mexico and Asia, but only a handful in Indiana, Perkins notes.

And, while dual enrollment is a reality, it doesn't come without extreme effort. Sexton must negotiate articulation agreements with individual college campuses. Current accords are in place with Ball State University, Indiana State University, Vincennes University, Louisville Tech and two of the 23 Ivy Tech campuses.

The process is getting somewhat easier, Sexton confirms, as colleges and universities become familiar with the Seymour program. There are only winners in the dual enrollment scenario. Educators at all levels must work to facilitate additional opportunities throughout the state.

INFORMATION LINK

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