Skelton Career Center

SkillsUSA State Gold Medalist Trains with Virtual CNC to Win Precision Machining Competition

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Students thrive on it and come to class better prepared."

- Brian Aiken, Instructor

Jacob Herd, South Carolina Precision Machining Gold Medalist

Skelton Career Center, Easley, SC, teaches machining skills, beginning with an introductory class in 10th grade, Level One in 11th grade, and Level Two for seniors. Graduates receive a high school diploma and find entry level jobs in machine shops—or can get advanced placement in technical college. Machinists are scarce and Skelton gets many calls from employers who want to hire graduates.

Until recently, Skelton students learned manual machining skills primarily. The addition of a Haas CNC Tool Room Lathe and Tool Room Mill have enabled students to expand their skills into CNC programming and operations. With over 10 students to one CNC machine, Brian Aiken, machine technology instructor, turned to the Virtual Training Environment for CNC, called VTE-CNC from LearnHaasCNC.com.

Junior, Jacob Herd used the VTE-CNC training system to teach himself CNC setup and programming. He learned so well that he won a Gold Medal (First Prize) in Precision Machining at the South Carolina state-wide competition sponsored by SkillsUSA. Herd will soon travel to Kansas City, MO, for the national competition.

"Stretching the School Day"

The turnkey Virtual Training Environment for CNC Machining (VTE-CNC) combines learning content management; virtual CNC mill and lathe panels and 3D simulated machines; and interactive graphical learning content. With VTE-CNC students may access actual industrial controls and machines to practice and learn CNC at their own pace—and without the risks associated with operating a real machine. Skelton put the program on line so students can access it anytime- whether at school or home. "The virtual CNC training environment allows unlimited time for my students to practice and prepare prior to using the real machine," said Brian Aiken.

Brian Aiken adds, "My industrial advisory committee required CNC curriculum and machining be added to our existing program without cutting short on the manual work." Students who are ready for the next level can access the VTE-CNC training system whenever they wish. "In less than six months the benefits of VTE-CNC paid off, because students thrive on it and come to class better prepared." Aikens states

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VTE-CNC supplements Skelton's curriculum of readings, videos, lectures, and classroom demonstrations. "It allowed me to stretch the school day because there's no way for students to carry a simulator—or a big machine—home with them," says Aiken. Today's young people grew up with computers and think the virtual controls and simulated 3D machines are "cool," he adds.

On the Road to Success

One of Aiken's many talented students is Jacob Herd, the son of an auto body mechanic who specializes in high-end cars. Herd got interested in machining, he says, by "reading magazines about all the car parts being made by CNC." He soon decided that machine shop "would be a good trade to pick up."

Herd already works part-time for United Tool & Mold, a local machine shop. "That kind of set me apart from most of the other students in the class," he says. While he did receive some CNC training from his employer, Herd credits his success to the VTE-CNC training program.

Brian Aiken, Instructor of machining technology demonstrates CNC machining setup and programming with a touch screen display. After the lecturer students are able to use their virtual CNC training system anytime.

Local Student Goes National

Skills USA is a national, nonprofit partnership of students, teachers, and industry working together to ensure that America has a skilled work force. The program is aimed at high school and college students who are preparing for careers in technical, skilled, and service occupations, including health care. Each year, over 5,000 students compete in 87 occupational and leadership areas.

The first round of the Precision Machining competition took place at the Skelton Career Center where students made a part on conventional machine tools. Whoever had the part closest to blueprint went to state. At the state competition, In addition to tests on machine tool technology , Herd wrote CNC code for a part and completed projects in precision measurement, lathe, mill, and surface grinder. Scores for each element of the day-long competition were added up to determine the winner. "Preparing in the virtual CNC training system gave me an edge in the competition." Herd said.

Next Generation Training System

Brian Aiken steps outside of yesterday's training paradigm to deliver a truly innovative learning experience. " I realized that I could combine VTE-CNC virtual CNC machining with a Promethean Board, which is a large touch screen display to present a life-size, fully interactive version of my CNC machining center in front of the entire class." Aiken says.

"Standing at the touch-screen board, I operate the virtual CNC control and machine as if I were standing at our actual machine. Occasionally, I will call a student to perform a particular operation such as set tool or work offsets, or write and execute a program in MDI. With this technique, all the students are looking straight at me," he says. Later, if they like, students may continue practicing actual operations on lab or personal computers at home.

Bottom Line: VTE-CNC has proven its worth as a teaching tool which makes better use of class time, and helps a student win a statewide competition. That's what they call a win-win.

Skelton Career Center is a customer of Haas Factory Outlet, a Division of Jeffreys. This customer story provided by Immersive.biz.