

Del Mar College Boosts Texas Skilled Workforce by Training with Vortex Simulator

With a combined construction boom and skilled labor shortage affecting the petrochemical and oil & gas industries near Corpus Christi, Texas, Del Mar College's Division of Workforce and Economic Development is busy establishing customized training programs for local energy providers. Heavy equipment operators are essential for these companies to maintain their busy production schedules, but workers may not always have the expertise to complete the tasks.

"Our goal is to educate students in the community," said Dara Betz, program manager, Workforce Programs – Corporate Services. "For the heavy construction industry, it can be expensive and challenging, and there are liabilities."

Two years ago, the college wanted to enhance its training programs. "We already had a safety program in place, and within that program, we taught the principles of heavy equipment operation," she said. While they were able to teach the main ideas using PowerPoint presentations and textbooks, the Corporate Services team decided that using a heavy equipment simulator would have a much greater impact on the students' ability to grasp the concepts.

"Simulators allow the trainees to purposefully undertake the hardest activities and procedural tasks in a safe environment without dangerous implications," Betz said. In addition to reducing the risk and liability of using a live machine for training, simulators eliminate maintenance, upkeep, fuel, and inspection costs, she added.

From an operating cost's perspective, Gary Griffith, the lead heavy equipment instructor at Del Mar College, said the rate to use a simulator is about \$75 per hour, while training on a crane is about \$75 per half hour. Costs for the students to utilize

the simulator cover instruction and training materials, providing electricity and internet service to the unit, and maintaining it.

"If you run the simulator for two hours, that's roughly the equivalent of running the crane for one full hour, when learning the principles and the way the machine moves," he said.

Three simulator manufacturers bid for the college's business, and the CM Lab's Vortex Advantage construction equipment five-screen simulator was determined to be the best solution for Del Mar College because of its cost and for providing a realistic feel for the user.

"Many simulators are a computer screen on a table with a gamer's joystick, and you feel like you're playing a video game," said Gary Griffith. "If you sit down at the Vortex simulator with the five screens, you actually feel like you're in a crane."

The Vortex Advantage was initially funded through a Texas Workforce Commission Skill Development Fund. It was purchased to train carry-deck crane operators, with the idea that the college would expand its program to other heavy equipment training modules.

When the college purchased the simulator, Betz said no other providers had earthmoving software except for CM Labs. The school was able to buy the excavator and wheel loader software shortly after purchasing the simulator. The unit is modular and the controls can be swapped out, which will enable for the school to add other software in the future. It is currently planning to add the backhoe, forklift, and tower crane training packs.

The Company

Located in Corpus Christi, Texas, Del Mar College's Division of Workforce and Economic Development designs workforce training programs for local industries. It was named by Southern Business & Development magazine as one of the "Best Community Colleges for Workforce Training in Texas."

The Situation

Cost-effectively enhance its heavy equipment training program through measurable student engagement.

The Solution

Adoption of a mobile Vortex simulator to take to area jobsites and testing centers for accrediting heavy equipment operators.

Taking it to the Site



Del Mar College's Vortex Advantage is a mobile unit, and it can easily be transported to the jobsite on a gooseneck trailer. "What we liked about the Vortex Advantage simulator is the learning and training can be at any time or location, and it can be repeated as often as necessary," Betz said. "Our customers are in the industry, and we want to meet their needs, which means going out to their jobsites and doing the training there."

Currently, the college has the simulator set up at Laguna Crane Services, a certified NCCCO crane testing company's yard, where students are able to take the NCCCO written and practical exams. "We are collaborating to come up with a training plan to help prepare operators for certification," she said. "They have the actual equipment, and we have the simulator. We will be integrating the two."

"It allows the student to go through the [NCCCO] course and practice as much as they want without getting on a real crane" ...

When students start training, their skills are assessed on the simulator to determine their level of proficiency. "All the scores are calculated, and we export and keep track of them," Betz said.

Like a real jobsite, the signalperson is crucial to crane operation on the simulator, and there is also a training component for the signalperson. While other simulators on the market use an avatar to provide the signals, the Vortex unit separates the operator from the signalperson. "Here, the operator can teach the signaler and tell him which signals to work on if they weren't clear," she said.

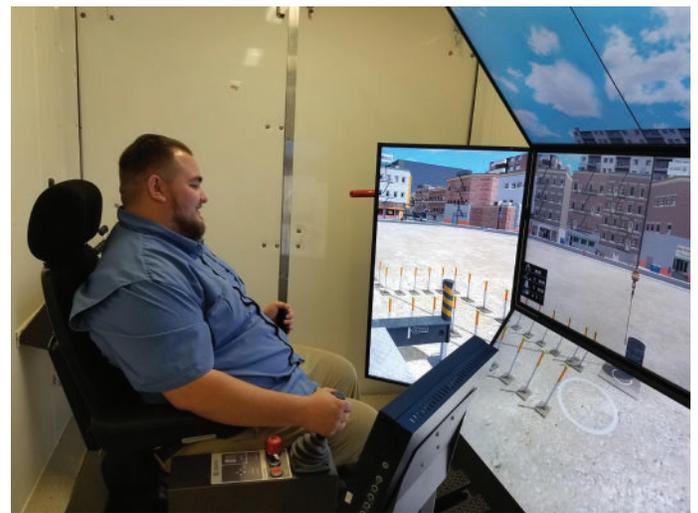
Measurements of Achievement

Del Mar College measures the success rate of its students using the simulator by their progression. "Students are learning more quickly because we are able to integrate environmental issues into their training," Betz said. "We can make it look like a real jobsite with personnel, weather issues, and all the different aspects of operating a crane in different situations."

Griffith said that the simulator also enables students to become familiar with the controls, helping them be more confident when operating a crane. "They get that muscle memory down, and when they hop in the crane, they are familiar with the controls," he said.

The ultimate goal for Del Mar College is for intermediate and advanced crane operators to be accredited by NCCCO. Practice exercises for accreditation testing are built into the Vortex software. "It allows the student to go through the course and practice as much as they want without getting on a real crane," Betz said.

Not only is Del Mar College training the region's workforce, but it is working the simulator into its own credited degree programs, which includes heavy equipment operations, maintenance technicians, and more. "The simulator is what we needed to kick start the program," Betz said.



Seat time in the Vortex simulator also has been approved by NCCCO as counting towards the hours required for operator recertification.