Case Study

Solving the Seat-Time Crunch: CM Labs Helps Alfred State College Get More Operators Job-Ready, Faster

Situation

Alfred State College's Heavy Equipment Operation course faced a major challenge: limited access to real machines meant students weren't getting enough "seat time" to build critical skills. At the same time, letting brand-new students practice on live equipment created safety risks for both students and instructors.

Solution

To address these challenges, Alfred State added eight CM Labs simulator units to its training fleet. This expansion gave students richer, more varied learning opportunities while reducing safety risks and expanding instructional capacity.

In addition, students and employess from the workforce can be assessed on a level playing field to enhance recordable and documentable skills.

Benefits

Alfred State expanded its instructional capacity and gave students more opportunities to practice safely and efficiently. Students not only learn to operate machinery correctly, but also how to optimize performance, which is integral for conserving fuel, reducing wear, and extending machine life. In addition, students and employees from the workforce can be assessed on a level playing field to enhance recordable and documentable skills.

Alfred State College Gets More Students Job-Ready

Alfred State College is a top-ranked institution, recognized for preparing students with the technical skills required to succeed in a competitive job market. The School of Applied Technology, now serving more than 1,100 students across two campuses, offers two-year degrees in one of four main areas of study: culinary, electrical machine tool and welding, auto service, and building construction.

The Heavy Equipment Operation course at Alfred State was thriving, but instructors faced an ongoing struggle to ensure that all students had enough time working on live equipment to fulfill their requirements

Limited Availability

Alfred State's primary objective is to get students job-ready, so the school took this struggle seriously. "Our firm goal in educating our students is to help them be work-ready," said Jeffrey Stevens, Dean for the School of Applied Technology at Alfred State College. "That is everything here."

To address the live training issue, instructors tried to stretch a limited budget to find enough machines for their roster of 70 students to reach the required hours of operation. With the funding available, the school was meeting demand through a patchwork of used equipment purchases and some rental pieces.

"We had so many students and too few backhoes that we had to rotate them out quite frequently, so they weren't getting as much seat time as we wanted. As a result, their improvements were slower to come," said Adam Fitzpatrick, an instructor for Alfred State College's heavy equipment operations course.

A New Idea

When the idea of simulation first surfaced, there was skepticism.

"I thought, these look like very expensive video games – I'm not sure what we're doing here," Fitzpatrick said.

"This was a whole different concept of a way of training than what we were used to," Stevens said. "We're used to hands-on real equipment. There were a lot of questions about how simulators could be integrated into the program."

To test the concept, Alfred started with two simulators to get a feel for how they would work into the program and how students would react to using them. The instructors and the students soon discovered that operating the simulators was very close to operating the real pieces of machinery.

Having all that equipment in one place, easy to access, was invaluable to the teaching staff, as was the ability to mimic real-world conditions like weather and lighting.

Getting Students More Prepared in Less Time

By adding additional simulators, it helped Alfred State to quickly grow the program to approximately 90 students.

"Those simulators are used for six or eight hours a day," Fitzpatrick said. "Now, the students can get the seat time they need. They get the proper hand-eye coordination. It's been a huge game-changer to have that extra teaching capacity on hand."

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Because each simulator can switch between multiple machine types, students gain exposure to a wider range of equipment and have more opportunities to practice a variety of skills. As a result, students now finish their training in a shorter period. Fitzpatrick estimates that because of the added seat capacity with the simulators, Alfred State has enhanced training time to getting students prepared by 20% to 30%.

While training and preparation for the equipment is faster, incorporating simulation into the program also has improved the safety of learning to operate large pieces of equipment.

"It's so easy for me to be able to stand next to a student during operation and tell them to do things a little differently. I can give them pointers and nobody's yelling, and nobody's at risk of being hit," Fitzpatrick said. "We can train them to do the right thing before they actually get into any equipment. It gives them a level of confidence to start building on."

Using the Intellia Training System, instructors can assess students on metrics like task completion time, fuel usage, and precision. This data-driven feedback helps students advance beyond operation to true performance optimization.

Increased Capacity

CM Labs' simulation training has been instrumental in helping Alfred State College get more equipment operators workforce ready. "When I first started five years ago, our program was smaller, with about 40 students enrolled. We wanted more seat time, more equipment, but the real dollar cost of buying/leasing/renting was prohibitive and unachievable for our goal," Fitzpatrick said. "Soon we will have 120 students just in our program for heavy equipment operation. That's made possible by having the seats available to improve and expand our program."

"That growth wouldn't have happened if we hadn't chosen this pathway," Stevens said. "Prior to this, we were challenged and worked very hard to cover the needs of two sections of our students in each year."

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An Educational Partner

In CM Labs, Alfred State College found a true partner in higher education. From delivering the first demo unit to providing ongoing service and support, the CM Labs team collaborated closely with instructors and administrators—first to understand how simulators could expand the curriculum, and then to help navigate the complex funding, grant, and purchasing process.

The sales and technical teams guided the college through acquisition, while CM Labs' webinars and video sessions helped instructors deepen their understanding of simulator-based teaching.

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Today, Alfred State College operates an extensive heavy equipment operator training program that supports over 100 students and is available to support workforce skills enhancement with a wide range of simulated equipment running on eight CM Labs simulators. With plans to add two more simulators, the college is continuing its mission to prepare the next generation of equipment operators with skill, safety, and confidence. Additional goals for the college are to expose and support workforce needs at a more direct employee/employer level.