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Web-based courses, hands-on evaluations score with employees and employers.

Many industrial facilities are challenged with recruiting and retaining an adequate supply of trained maintenance technicians. Most of the people who possess the required skills already have positions. Younger people just coming out of school generally do not seek careers in this field.

Now some of these companies have turned to a new hybrid solution to train technicians that combines the efficiency and economy of online delivery with the practicality of hands-on performance evaluations.

Classroom training difficult

The answer to a skills shortage may appear deceptively simple: industrial companies could both train new technicians internally and upgrade the skills of those they currently employ. But many organizations have encountered an additional obstacle: when and how to provide the training. Until recently most have relied on after-hours classroom training, an approach that has met predictable resistance.

One such company is Fluor Corp., one of the world's largest engineering, construction, and maintenance services organizations. Jim Maxon, senior manager of the Maintenance Technician Training Program for Fluor's Operations and Maintenance Unit, found offering classes after regular working hours did not meet the needs of the workforce.

"Many Fluor technicians work 10-hour work days and multiple shifts," he said. "To ask technicians to stay after work on their own time for an hour-and-a-half to two hours to attend a course is too much for the typical family-type person."

Web option considered

One solution to this training dilemma is Web-delivered training. It provides the kind of scheduling flexibility that employees want. However, many managers have remained unconvinced of its value for the kinds of hands-on skills that maintenance technicians require.

Online training may effectively teach concepts and cognitive skills, skeptics argue, but then

you have people who know concepts but have not had to demonstrate practical skills.

Fluor originally planned to use CD-ROM-based courses for technician training. The company began a pilot project but soon discovered that it would cost in excess of $100,000 per site to purchase the necessary licenses. Since Fluor trains technicians at multiple locations, the price tag far exceeded what the company wanted to spend.

Fluor approached training vendor PRIMEDIA Workplace Learning about converting the costly CD-ROM courses into Web-delivered ones. The company agreed but decided to go further to meet the specialized demands of maintenance training. That program has now become what PRIMEDIA calls PRIMEed.

New multi-pronged approach

The program takes a multi-pronged approach to training maintenance technicians that combines competency evaluations, a library of 75 Web-delivered courses, and hands-on performance evaluations.

“We created this program to meet the needs of industrial customers who want flexible training for their employees and who also want their employees to be able to quickly apply that knowledge on the plant floor,” explained William R. Joiner, vice president and general manager of PRIMEDIA’s Industrial Services Group. “The addition of hands-on performance evaluations to our online offerings gives companies a blended solution that combines the advantages of both training methods.”

The program’s approach affords industrial companies some distinct benefits. The competency evaluations, delivered online, help companies identify knowledge gaps and deliver only the training each technician needs.

Another advantage comes from Web-delivery of course material, which enables employees to take the courses on their own schedule and at their pace while helping companies minimize employee downtime. However, it is the hands-on element that has made the difference for companies such as Fluor.

After employees complete a course online, they are given a hands-on performance evaluation. These evaluations can be administered by subject matter experts at a company's facility or at a local community college that offers the program. Performance evaluations not only ensure that employees retain what they learned online but also require them to demonstrate that they can apply those skills on the plant floor.

Fluor uses its own certified instructors to verify that employees can perform the hands-on requirements for a particular course. The company certified over 100 evaluators at its multiple locations through the National Center for Construction, Education, and Research (NCCER).

College involvement

Other companies have chosen to work with community or technical colleges to administer the program and provide instructors and lab facilities for the hands-on evaluations. For example, Greenville Technical College, along with the 15 other schools in the South Carolina Technical College System, offers the training program as part of its continuing education curriculum.

Ned Horton, director of occupational and industrial relations at Greenville Tech, likes the program because his school can tailor it to meet the specific needs of companies in its service area.

"One company may have three different courses they want their people to go through," he said. "In the past, it was one size fits all, but now we have a tremendous amount of flexibility in customizing the program to meet the needs of individual customers and their employees."

Some hands-on evaluations run 4 hours while others may last only an hour. Greenville Tech sets its labs up in 8-hr blocks so it can include several different sessions in one day, which accommodates companies that prefer to have employees report to the college for an entire work day and cover as much material as they can rather than have them attend several short sessions.

This blended approach also overcomes the problem of students who struggle with the content but want to complete the courses. "They can take one hour to go through a Pneumatics I course, or they can take as long as they need," Joiner said. "They can go through it over and over again until they get it without being rushed or embarrassed because they didn't get it the

first time." In fact, if employees encounter difficulty during a hands-on performance evaluation, they can review the course materials and try again.

System manages training

Another component of the training program is the learning management system (LMS) that the company developed specifically for the new program. The LMS has automated all steps of the process, from scoring the results of an initial competency evaluation to enrolling students in specific courses and scheduling them for the accompanying hands-on performance evaluations.

According to Keith Carpenter, director of national accounts for PRIMEDIA, the company designed the LMS so that "the individual's customized status page shows them exactly where they are within each training track. The LMS also forms the entry point where employees can simply click on the courses or tests to take."

Once an employee in the program has met all the prerequisites—the courses they must pass as determined by the initial competency evaluation—the LMS automatically provides them with the schedule for the hands-on evaluation. Employees can enroll in the hands-on evaluation only after they have mastered the theory behind each skill.

In regard to the LMS, Maxon said, "We track and maintain all records of the Maintenance Technician Training Program within the database with no required data entry. To date we have administered over 10,000 tests, all of which have been scored electronically within the LMS. Our workforce development coordinators are able to access all this information easily through a user-friendly format. It is a pretty remarkable tool that is saving Fluor thousands of dollars each year in testing administration."

Fluor is committed to the program and is delivering it to far-flung areas, so these Web-based delivery and tracking capabilities are critical. Maxon recently demonstrated the courses to a group in Shanghai, China. He has also done demonstrations for groups in Manila, Korea, and Australia.

Fluor's operations and maintenance management has been pleased with the results to date relative to the number of courses successfully completed, the number of Fluor certifications

issued, and the “repeat business” of the technicians. This “repeat business,” Maxon explains, “speaks volumes about the overall system and approach to training being deployed.” **MT**

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