The Growing Industrial Skills Gap

Veteran workforces are retiring as 10,000 baby boomers, every day, reach the traditional retirement age of 65. Corporations now face the reality of a growing skills gap seen in the knowledge levels of both current and incoming employees. This retirement escalation began back in 2011 and is forecasted by AARP to continue for the next 14 years.[1] With retiring mentors walking out the door for the last time, they are taking their skills and experiences they have accumulated over the course of their career. Many incoming generation Y employees are missing those vital skills. A recent study to learn more about this apparent industrial skills gap was conducted by the Manufacturing Institute which surveyed over 450 U.S. manufacturing executives.

> "To address the skills gap, manufacturers not only have to find workers with the skills required to meet today's and tomorrow's advanced manufacturing requirements, they must also develop and engage their existing workforces. Seven out of 10 executives reported shortages of workers with adequate technology, computer, and technical training skills. The executives see developing their workforces as the most effective way to remedy the problem, with 94 percent agreeing internal employee training and development programs are among the most effective skilled production workforce development strategies."[2]

Knowledge management is becoming critical to the future success of any company. This signifies that companies should invest in building a better, more knowledgeable workforce to remain competitive in a changing industry. Among more common initiatives to enhance working environments, continuing education and safety training programs are vital in improving the overall safety and effectiveness of on-the-job skills. As previously mentioned, 94 percent of U.S. executives believe that internal training programs are one of the most beneficial tools in developing a workforce that can overcome the departure of their veteran workers. Continuing education and training programs give employees the resources necessary to obtain skills that are relevant to his/her position and apply those skills on-the-job.

Company-specific training programs are effective because they provide consistent, standardized skills to an entire workforce. Successful training programs have the capability to train for customized and required skills as facility requirements change. With TPC's online training program, every course is fully customizable to individual facility needs. Since courseware is delivered online, any updates to the content are instantly published to students. On-location training programs introduce skill levels from the most basic to more complex and efficient techniques and safety procedures that can be used on the shop floor. Along with strengthening employee's skills, an increase in productivity can also be seen from a reduction in downtime as a result of having a better understanding of operation and safety procedures. DeWys Manufacturing noticed increased loyalty and employee retention after investing in employee training.

DeWys Manufacturing in Marne, Michigan, started DeWys University about 4 years ago as a result of an absence of incoming skilled technicians. Since implementing its on-location training program, new DeWys Manufacturing technicians, as well as veteran employees, are able to learn critical, shift-relevant skills that directly address topics needed to perform successfully on-the-job. The company culture at DeWys has shifted toward one that fosters continuous learning and encourages employees to improve skills within their current job function, as well as cross-train on other skills that could be used across the facility. Cross-training benefits both the employer and the employee because new skills are transferred and applied toward multiple job functions, making each employee more valuable.[3] On-location training is making an impact in closing the current knowledge gap seen at DeWys manufacturing facility.

Inefficiencies in the current workforce can be seen more specifically as today's technology and safety regulations are rapidly changing. Remaining trained on current safety practices keeps a facility running safely and smoothly. OSHA's "rulemaking process"[4] puts industrial safety regulations through an intense process which evaluates any procedural updates that may need to be made. The technology behind maintenance processes is also updated and improved upon. In 2014, the U.S. government passed a bill for a "National Network of Manufacturing Innovation, designed to accelerate the development and delivery of advanced manufacturing technologies."[5] Advancement in safety and technology translates into a need to provide ongoing training to use and troubleshoot equipment efficiently. Third party training programs help ensure employees are learning up-to-date information on the procedures and regulations that are required for their job.

When implementing a third party training program, it is important to remember that each learning experience is unique. This makes course design an important factor to consider when building a successful training program as it directly influences how employees will process information and transfer it to new skills. The ADDIE model is an instructional standard used in course design to develop training programs. In 1975, the ADDIE model "was designed and developed for the U. S. Army which was later on implemented across all U.S. Armed Forces."[6] This field-proven approach to designing, developing, reviewing, and delivering performance-based training materials helps trainers get the most out of their training plan. With frequent revisions prompted by the feedback loop, training material designed under this process is consistently presented in a way that optimizes retention of ideas into one's long-term memory, creating new skills that transfer to on-the-job performance.

ADDIE Model – Instructional System Design (ISD)

Analyze → Design → Develop → Implement → Evaluate

Feedback Loop
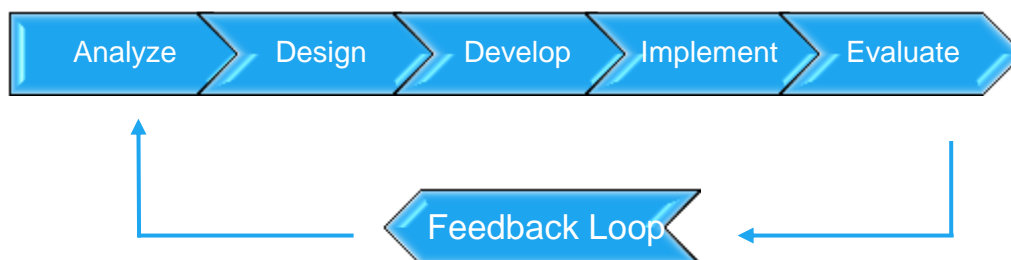
Training programs designed using the ADDIE model look at education as a process that encourages active learning. Training content developed using the ADDIE model provides

students with outlines, objectives, interactive examples, and evaluations. Hands on exercises and real world simulations should be provided whenever possible to transfer learned ideas to on-the-job skills. Training magazine suggests that "the intention behind training generally is to improve employee performance. By extending that learning through reinforcement, you are giving your employees the tools they need to be better over the long term – not just for the week."[7] TPC Training Systems' courses are designed using the ADDIE model, including its iSchematic tool which takes interactive learning a step further by reinforcing learned concepts with digitized schematics in maintenance processes and training materials. TPC courses use this model and provide a structured format that allows students to learn complex material effectively.

With structured training programs, course accreditation is equally as important as training course design. Accredited courses are reliable training tools because they assure the quality of the training course meets industry standards. TPC's courses follow standards that are set by the International Association for Continuing Education and Training (IACET) and the American National Standards Institute (ANSI). IACET/ANSI accreditation ensures that the training provider "has successfully mastered IACET's rigorous accreditation process and is committed to best practices in adult learning and professional training."[8] While any provider can offer Continuing Education Unit's (CEU's) for its courses, IACET/ANSI CEU's are "recognized by learners, instructors, regulators and employers worldwide and can only be awarded by IACET Accredited Providers."[9] One CEU includes 10 contact hours from a continuing education course. Each hour long lesson provided by TPC Training Systems is worth 0.1 CEU.

If left alone, the industry-wide skills gap will rapidly expand as baby boomers continue to reach retirement over the next 14 years. Adopting a training program prepares employees for the demands of today's maintenance positions. Ongoing training programs will keep your facility competitive as the industry loses valued veterans and their skills. Employers agree that effective ongoing training programs are the solution to a growing problem, as employee training has shown to provide a positive return on investment as industry and workforces continue to evolve. Only TPC Training Systems can provide a total training solution to start closing the knowledge gap in your facility today.

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View TPC Training Systems Course Library Here

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[1] Bill Shea, "as baby boomers exit workforce, employers don't want knowledge to go with them," 3 Jul. 2015 http://www.crainsdetroit.com/article/20150703/NEWS/307059997/as-baby-boomers-exit-workforce-employers-dont-want-knowledge-to-go

[2] "The skills gap in U.S. manufacturing 2015 and beyond", (Manufacturing Institute, Deloitte.) http://www.themanufacturinginstitute.org/~/media/827DBC76533942679A15EF7067A704CD.ashx

[3] Laura Putre, "Need Skilled Workers? Start Your Own University," 10 Jun. 2015 http://www.industryweek.com/education-training/need-skilled-workers-start-your-own-university?page=1

[4] "OSHA Law & Regulations" https://www.osha.gov/law-regs.html

[5] Jim Lawton, "As China Moves from Volume to Value, So Do Robots" 21 Jul. 2015 http://www.industryweek.com/robotics/china-moves-volume-value-so-do-robots

[6] "The ADDIE Model: Instructional Design" http://educationaltechnology.net/the-addie-model-instructional-design/

[7] Dave Hamilton, "Reinforce and Practice Training Again and Again," 14 Jul. 2015 http://www.trainingmag.com/reinforce-and-practice-training-again-and-again

[8] "Who We Are," http://www.iacet.org/about/who-we-are

[9] "About the CEU," http://www.iacet.org/ceus/about-the-ceu