OCCUPATIONAL SAFETY & HEALTH COMPETENCIES ARE LIFE SKILLS FOR CTE STUDENTS

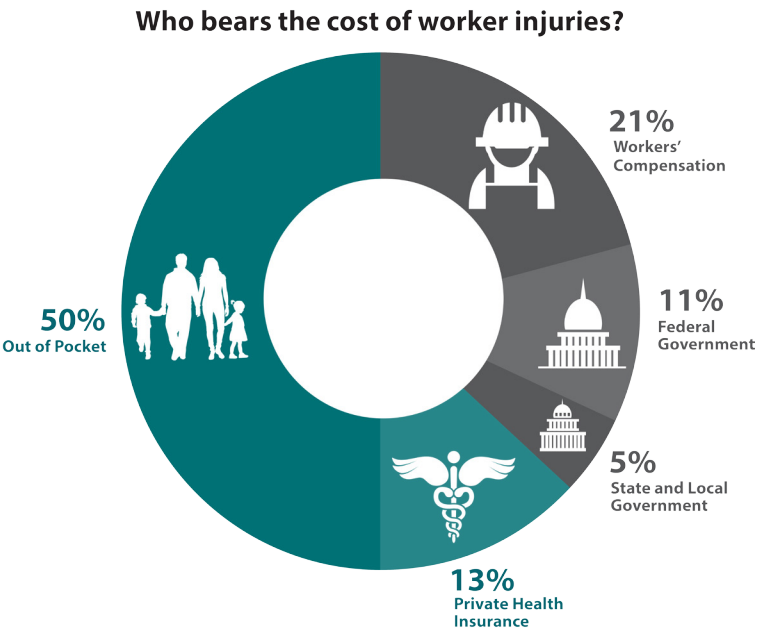
By Christina Jones, Annette Braam and Andrea Okun

Central to ensuring that career and technical education (CTE) students build the skills and knowledge to succeed in a workplace, is giving them the ability to make thoughtful decisions about completing a job task safely and to speak up when a job task is not safe. These are fundamental competencies for all workers and life skills necessary for youth entering the workforce.

Workers under age 25 suffer disproportionately from workplace injuries ("Occupational Inuries," 2010). When compared to adult workers, young workers have a higher threshold for risk-taking; are susceptible to peer pressure; are still developing both cognitively and emotionally; and have other unique characteristics that — compounded with their inexperience — may predispose them to workplace injuries (Sudhinaraset & Blum, 2010). In addition, newly hired workers are more likely to be injured at work than workers with longer job tenure (Bena, Giraudo, Leombruni, & Costa, 2013), and young workers are likely to be new hires multiple times a year.

Injuries have impact beyond physical harm. In its 2015 report, "Adding Inequality to Injury: The Costs of Failing to Protect Workers on the Job," the Occupational Safety and Health Administration (OSHA) found that employers cover only a small percentage of the cost of workplace injuries and illnesses through workers' compensation. The majority of the costs are covered by injured workers, their families, private insurance, and state and federal programs (e.g., Medicaid) ("Adding Inequality," 2015). Out-of-pocket medical costs and lost wages are devastating for young workers contributing to household income or working to become independent.

While employers are ultimately responsible for protecting their workers, integrating occupational safety and health (OSH) training within CTE programs can have a lasting positive effect. One study, which followed students in France for two years after leaving a baccalaureate or apprenticeship program, found that students who received OSH training during schooling had two times fewer workplace injuries than those who did not (Boini, Colin, & Grzebyk, 2017). Providing CTE students with foundational OSH competencies empowers them to recognize dangerous conditions, speak-up and raise issues with their coworkers and supervisors, and work with their employers to improve workplaces and prevent injuries.



Source: United States Department of Labor, Occupational Safety and Health Administration. (2015).

What We Know About Safety and Health Training in CTE Education Today

The industry has made a significant series of efforts to better integrate OSH competencies into CTE frameworks, standards and curricula. Schulte et al (2005) discussed efforts with the National Association of State Directors of Career Technical Education Consortium (now AdvanceCTE) to incorporate OSHA and EPA standards into all career cluster knowledge and skills statements. More recently, in 2014, the United States Department of Labor, Employment and Training Administration (ETA) added health and safety as a Tier 3 Workplace Competency in their Generic Building Blocks Competency Model. And, in 2017, NIOSH and OSHA worked with ETA to incorporate NIOSH's eight foundational OSH competencies into this block ("Building Blocks," 2017 ; Okun, Guerin, & Schulte, 2016).

These efforts helped lay the groundwork and can influence state-level standards, the primary driver for what is taught in CTE classrooms (Bush & Andrews, 2013).

Few studies have focused specifically on OSH training in CTE. However, one study explored OSH training in construction-focused CTE programs; Bush and Andrews (2013) found that educators "are keenly aware of the need for OSH training, and are all doing some amount of classroom and hands-on training on OSH." While the requirements for and delivery of OSH training varied, the authors found that OSHA's 10-hour Construction Outreach Training Program course was "almost universal at the community college level, and growing at the high school level." They also provided extensive information about the methods and resources used by instructors to provide OSH training, including (Bush & Andrews, 2013):

- Classroom-based OSHA 10-hour Outreach construction class
- OSHA-authorized online 10-hour Outreach classes such as CareerSafe
- The National Center for Construction Research and Education's (NCCER) Basic Safety Unit
- NIOSH Talking Safety curriculum
- The OSHA's 11 curriculum, which includes participatory activities for the OSHA 10-hour
- The Young Worker Safety and Health Training for the Construction Industry for use in conjunction with NIOSH's Talking Safety activities

This study's results are not strictly representative of disciplines or career clusters other than construction. However, the authors' findings may be helpful in identifying barriers, gaps and needs. Key among the barriers were those

preventing instructors from teaching a high-quality OSHA 10-hour Outreach class, including qualifying and becoming an authorized trainer; the amount of information required to be taught; challenges to presenting material in a participatory manner; "seat time" requirements; length of the class; and keeping students with limited work experience engaged (Bush & Andrews, 2013). Regarding needs, study participants consistently expressed the need for tools to help teachers "conduct more participatory classroom training on OSH, and in particular activities that build students' problem-solving and communications skills" (Bush & Andrews, 2013).

Helping CTE Educators Reinforce Foundational OSH Competencies in CTE Classrooms

NIOSH's Youth@Work — Talking Safety curriculum is a free, interactive curriculum that teaches essential work readiness skills to middle and high school students through a focus on eight core competencies. The program, designed for a classroom or group training setting, includes six main lessons that are each designed for a 45-minute class period. There are five supplemental 45-minute lessons with additional activities. The curriculum is flexible, can be tailored to the students' needs, and has been customized for each state and territory to address state child labor requirements. Each lesson contains a lesson plan, student learning objectives, preparation steps, detailed instructor notes and background notes with supplemental information. Each lesson begins with an introductory discussion, followed by two or three participatory learning activities to teach lesson concepts. At least one learning activity in a lesson is basic, with minimal or no reading.

An assessment component of the Talking Safety curriculum, developed in partnership with NOCTI, measures a student's acquisition of the foundational OSH skills taught. Students receive a digital badge for successfully meeting the assessment's passing benchmark.

The OSHA Outreach Training Program provides training on recognizing, avoiding and preventing workplace hazards, and introductory information about OSHA, including workers' rights and employer responsibilities. The OSHA 10-hour Outreach class is intended for entry-level workers, and classes exist for construction, general industry and maritime industries. The wallet card given to trainees after completion is an industry-recognized credential recommended across all career pathways. Several states and cities require completion of the 10-hour Outreach construction class for work on publically funded and other construction sites.

Each 10-hour Outreach class is comprised of a set of required and elective modules that can be used to customize a class for a trade or workplace. There are minimum timeframes for each module and roughly seven hours of each class is devoted to required material. For example, required modules for the 10-hour Outreach construction class include the "Introduction to OSHA," "focus-four" topics (i.e., four hazards associated with most construction fatalities, such as falls); personal protective and lifesaving equipment; and health hazards in construction. The remaining three hours consist of elective and optional topics outlined in the program requirements. Outreach trainers may break the class into time segments to deliver the training over multiple days, weeks, or months.

The OSHA website contains training materials and resources for each of the modules, including PowerPoint presentations, lesson plans, and other relevant handouts. Trainers may modify the PowerPoint to suit their students' needs, but must ensure that students meet the learning objectives for each module. Qualified individuals can become authorized OSHA Outreach trainers through a national network of OSHA Training Institute (OTI) Education Centers.

Using These Resources in Your Classroom

NIOSH Young Worker Training
Policymakers in Oklahoma and Texas passed Oklahoma Senate Bill 262 (April 2015) and Texas House Bill 2010 (June 2017) to promote OSH training in appropriate courses for students in grades seven through 12. Currently, the Oklahoma Department of Labor and the Oklahoma City Public Schools (OKCPS) are partnering with NIOSH to conduct a demonstration project on the impact of integrating the NIOSH Talking Safety curriculum into Fundamentals of Tech-

nology. Approximately 75 percent of all ninth-grade students in the OKCPS system take this CTE class.

CareerSafe Online OSHA 10-hour Outreach Training

CareerSafe is one of nine OSHA-authorized providers of online OSHA 10-hour Outreach training. Its course utilizes a youth-to-youth training model, which enables students to hear about hazard recognition and avoidance from a peer group, and understand and accept the information more readily. The course offers topic-specific modules built to involve students in learning through dynamic activities and knowledge checks. The custom-built learning management system tracks the time spent on each topic and maintains exam results for the pre- and post-tests, and end-of-module assessments.

CareerSafe courses have been used primarily in CTE programs to train almost a million students in 3,500 schools. CareerSafe offers the general industry and construction OSHA 10-hour Outreach courses, and has customized the general industry course for both agriculture and healthcare. Teachers use the course in multiple ways, some requiring the course be completed before students engage in hands-on activities. Teachers may also assign the self-contained, online course as homework, or provide time for completion during class or in a computer lab.

Outreach Training Integrated at Alaska's Kodiak High School

Kodiak High School integrates the OSHA 10-hour Outreach construction class into its welding program as a foundation for safety in the classroom. Currently, all first-year welding students complete the class as provided by the instructor, an OSHA-authorized trainer. Each student participates in the class and then must apply the lessons taught while working in the shop, and more seasoned students are assigned to mentor the younger. This includes things such as tool inspection prior to use, and actively looking for and mitigating hazards before beginning work in the shop.

According to the instructor, integration of the OSHA 10-hour Outreach class into the school's welding program has changed the students' mindset from one of expecting to live forever, to one of actively practicing safety and encouraging others to do the same. The injury rate in the welding program has been reduced — a significant accomplishment for a program with more than 100 students enrolled annually. Completion of the OSH training program also assures a potential employer that a student is work-ready, making them a better job candidate.

OSHA Sustainable Workforce Alliance, Atlanta, Georgia

Since 2006, OSHA's Sustainable Workforce Alliance has helped address the safety and health training needs of Georgia's youth workers by offering the OSHA course in three local high schools. The Alliance brings together OSHA, safety and health professional organizations, trade organizations, academic institutions, state government, and local employers to provide this training, and to conduct other youth-related activities.

The Alliance recently implemented a GDEcD grant program to help qualified CTE teachers become OSHA-authorized outreach trainers. In support, the Georgia Institute of Technology's OSHA Training Institute Education Center (OTIEC) developed a discount program for qualified candidates. The first successful applicant of the GDEcD grant program, Jim Steel, is a SkillsUSA advisor and construction instructor at Crisp County High School. Said Steel, "As an OSHA authorized outreach trainer, I have the opportunity to add value to my students' construction educational program and to deliver OSHA 10-hour cards to them."

Training is delivered to students over an eight- or nine-day period and students are tested at the conclusion to assess the course's effectiveness. Seventy-eight (78) students have completed the training, and approximately 175 students are enrolled in the school's construction program for the 2017–18 school year (T. Bosley, personal communications, August, 2017). Alliance members also provide safety training through the AGC's Adopt-A-School Program.

Conclusion

Young workers remain a vulnerable worker population in the United States. Integrating foundational OSH competencies into CTE education is critical because, simply put, students who receive OSH training during schooling have fewer workplace injuries than those who do not (Boini, Colin, & Grzebyk, 2017). Use of the OSHA, NIOSH and other OSH training curricula and resources pre-

sented here will instill students with life skills that will enable them to succeed fully in their careers. ■

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Free Occupational Safety and Health Resources Available

ACTE and several other organization partners have advised and supported research on postsecondary construction safety and health education. The research was conducted during the 2015–16 school year by the University of California Berkeley's Labor Occupational Health Program and West Virginia University's Injury Control Research Center.

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SPREAD THE NEWS about these resources by downloading an informational handout that can be used at your meetings.

ATTEND the session titled "Safe Students, Safe Workers: Tools and Resources for Construction Programs" occurring on Saturday, December 9, at CareerTech VISION 2017 in Nashville.

Every day, two to three workers die on construction sites in the United States. New and young workers are at high risk for injury. Career and technical education programs can help keep future workers safe through quality safety and health education.

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