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The Education of a Safety Professional

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Safety Professionals are individuals who are engaged in the prevention of events that harm people, property or the environment. Occupational safety professionals help organizations prevent injuries, illnesses and property damage. These professionals must acquire knowledge of safety sciences through education and experience so that others can rely on their judgment and recommendations. They use qualitative and quantitative analysis of simple and complex products, systems, operations and other activities to identify hazards. They evaluate the hazards to identify what events can occur and the likelihood of occurrence, severity of results, risks (a combination of probability and severity), and cost. They identify what controls are appropriate and their cost and effectiveness. Safety Professionals make recommendations to managers, designers, employers, government agencies and others. Hazard controls may involve administrative controls (such as plans, policies, procedures, training etc.) and/or engineering controls (such as safety features and systems, fail-safe features, barriers and other forms of protection). Safety Professionals may manage and provide help to implement controls.

If we accept the aforementioned broad definition, what then of the “knowledge and skills” that one must acquire through education and experience?

The breadth of this profession is extensive. It requires knowledge of basic sciences like; chemistry, biology, physics, mathematics, and other sciences like behavioral sciences. It also requires background in business, training and education, strong communication skills, as well as engineering concepts. From one industry to another it requires an understanding of particular types of operations such as: healthcare; construction; manufacturing, and transportation, etc.

The knowledge and skills Safety Professionals acquire through this formal educational experience, is refined and becomes useful through internships and other work experience, enabling them to identify hazards and the appropriate level of control needed to prevent untoward events. Supervision by other experienced, competent safety professionals may be especially valuable to recent entrants into the field.

Unlike other recognized professions, individuals entering the safety profession are very heterogeneous. They may have an educational background as diverse as anyone can imagine from literally, arts to zoology and everything in between. Business majors, Liberal Arts majors, as well as Applied Science and Engineering students frequently become engaged in safety. The formal education of these individuals needs to appreciate and to a large degree, celebrate their diversity and backgrounds. Basic and Applied Sciences and Liberal Arts and Business studies and the knowledge gained in each area are all in the quiver of an accomplished Safety Professional. These individuals may not be “expert” in all areas of safety. However, they have a basic, fundamental understanding and appreciation of safety sciences that enables them to identify hazards and the appropriate controls. Just as in other professions, a generalist or even a specialist should

know when to call in others to help with an unfamiliar problem or one not in their area of competency.

A recent study by Dr. Earl Blair from Indiana State University using a survey of CSP's and educators concluded that Safety Professionals need to be more than simple technicians. They also need to have a good grasp of business and be good communicators, as well as have good management skills. They need to be a total package in order to be successful.

At the undergraduate level, schools have the opportunity to provide much of the formal knowledge and safety foundation these future safety professionals will need to have gained and assimilated. Yet like many other professions, today more than ever, at the undergraduate level it is currently virtually impossible to "load" students with all the courses in safety they should have to hit the ground running, as complete safety professionals. Some period of "apprenticeship" or work under the guidance of a seasoned safety professional (formal, educational internships) and additional, life long study is necessary.

At the graduate level, schools need to be aware of a students undergraduate course work and work experiences, so they can provide an educational experience that will prepare them for a profession with the breadth necessary to practice at a professional level.

The American Board of Engineering Technology (ABET) accredits individual safety and related degree programs. This accreditation is outcome based, as schools meeting these accreditation requirements will have demonstrated that these program graduates can actually perform work to prevent events that harm people, property or the environment. This process recognizes the importance of work experience and includes some form of internship as a requirement for accreditation. The verification of success achieving the stated outcomes may vary by program and can include surveys of alumni and employers but one that is more objective, is the program graduate achieving accredited certifications (i.e., CSP, CIH, CHP, CHMM, CPEA).

The thrust of all formal education needs to focus on providing the information and skills necessary so that graduates can apply safety sciences, so others can rely on their judgment and their recommendations to prevent injury, illness and property damage. An actively engaged industrial advisory committee that reviews and make recommendations on curricula can be very useful.

References

Board of Certified Safety Professionals, web site; www.bcsp.org, "What is a Safety Professional".

American Society of Safety Engineers, web site; www.asse.org, Career Guide to the Safety Profession.

“Critical Competencies for SH&E Managers – Implications for Educators”, by Earl Blair.