

Key Competencies Preparing Graduates for the Global Workplace

By Joseph M. Losko and Tracey L. Cekada

Globalization is changing the OSH profession and, ultimately, how OSH professionals and educators prepare the next generation of practitioners. Thus, the profession's stakeholders must constantly study and evaluate the global workplace to identify ways to improve performance and expand knowledge. One of ASSE's core values states, "We are dedicated to protecting people, property and the environment. We reach out globally, providing opportunities to collaborate with and engage anyone involved in safety, health and the environment" (ASSE, 2013).

Furthermore, the Society's vision is to be a "global" advocate and "premier leader for the safety, health and environmental professional and the profession" (ASSE, 2013). To achieve these two critical goals, OSH professionals and educators must continue to evaluate the competencies required by future practitioners.

Globalization demands that current educators and professionals identify the skills, knowledge and behaviors that current students will need to be globally competent in practicing OSH. Schulze (2007) argues that "the world is truly a small place, where the impact in one region is truly felt globally" (p. 1). He adds, "Although the globalization of economies has brought economic growth and new prosperity to many regions of the world, it has also brought with it increasing safety concerns" (p. 1).

Competencies for Today's Workplace

Current occupational safety curricula and education have evolved from studies identifying the competencies or, more recently, outcomes needed for OSH professionals. These studies have used quantitative and qualitative methods to compare and evaluate the competencies desired by practitioners, employers and educators. Organizations such as ASSE, BCSP and ABET (formerly known as Accreditation Board for Engineering and Technology) have also provided input and recommendations on curricula, competencies and outcomes.

However, most of the competencies determined by these groups were based on the belief that students would work in the U.S. after graduation. Now, more students will work abroad. Mark Friend (personal communication, Nov. 19, 2012) succinctly describes this changing situation:

Currently in the U.S., the safety programs are built on the Code of Federal Regulations (CFR), rather than on best practices. Increasingly, we see foreign students enrolling in our programs, and we send

IN BRIEF

- **Classroom curriculum for OSH students continues to evolve. The profession is more dynamic than ever and the global workplace presents emerging challenges.**
- **This article examines the competencies that educators and OSH professionals deem necessary for global safety practice.**
- **These competencies include hard (technical) and soft (nontechnical) categories. The ability to utilize and acquire communication skills, and to understand culture and customs specific to the area of practice were identified as key. Soft competencies were identified as vital to implementing and facilitating the technical aspects of OSH as well.**

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our own graduates overseas to work. The CFR often becomes meaningless. We fail to organize our priorities based on the need of the companies and their employees. We need to find out what is really important to them and base our programs on those. Of course, for American students, [the] CFR continues to be important, and [it] may well relate to best practices. For students working in other countries, they need to know how to access local regulations and focus on the most important needs of the organizations where they work.

In a speech on competencies at the 2008 XVIII World Congress on Safety and Health at Work, 2008-09 ASSE President Warren K. Brown, CSP, ARM, CSHM, commented on the need to build on career competencies in addition to being aware of the world's cultures. More specifically, he said, "[A]ll professions are facing change and many are reinventing or adding on to their competencies to address emerging worldwide issues and problems while businesses are doing the same" (Brown, 2008).

The 2013-14 ASSE President Kathy A. Seabrook, CSP, CFIOSH, EurOSHM (personal communication, Jan. 1, 2013), echoes Brown's thoughts:

[T]o be competitive in the global workplace, safety professionals need to be prepared. This means developing the competencies necessary to be successful in their jobs, which includes understanding risk-based approaches to safety, health and environmental management as well as how cultural and legal differences, country to country, impact how these approaches are implemented. This research is an addition to the body of knowledge of the safety profession. It begins to identify specific competencies for successful global safety professionals and further defines common expectations for the safety profession, all to a common goal of safe and healthy workplaces around the world.

Others (Achterberg, 2002; Collins & Davidson, 2002; McMurtrie, 2007; Morey, 2004) have commented on the American educational system's inability to produce global workplace-ready graduates, as summarized by Lacy (2002):

Despite a great deal of discussion about the global institution, the importance of international research collaboration, and the need for undergraduates to be globally competent or able to function in a multicultural and shrinking world, the level of international learning in U.S. colleges and universities has remained disturbingly low. (p. 1)

Defining Global Competencies

Several studies have attempted to define what it means to be globally competent and to identify the knowledge, skills and behaviors necessary to become globally competent. For example, Hunter (2004) aimed "to enable higher education officials to create a curriculum designed to ensure that college graduates are globally competent" (p. 14). He reports that the definitions of the term *globally competent* include:

- actively seeking to understand cultural norms and expectations of others;

- ability to communicate effectively across cultural boundaries;
- ability to work effectively outside one's own environment;
- ability to interact effectively across cultures;
- understanding one's own cultural norms and expectations (Hunter, 2004, p. 76).

These statements and definitions address what are often termed *soft competencies*. These have also been defined as the "interpersonal, human, people or behavioral skills needed to apply technical skills and knowledge in the workplace" (Weber, Finley, Crawford, et al., 2009, p. 354). These soft skills may not be captured by the more measurable (or hard) ABET outcomes, which are often associated with the "technical aspects of performing a job." However, these soft competencies may be significantly important for the success of future professionals working in the global workplace. As Weber, et al. (2009), note, most companies prefer that managers have the soft skills needed to be successful within the environment of their organization and will select applicants who can use these skills successfully.

Arnold and Davey (1992) highlight the need for more research on the soft competencies in addition to hard competencies. They found that managers rate graduates poorly with regard to their soft skills, suggesting a deficiency in collegiate preparation. Rainsbury, Hodges, Burchell, et al. (2002), suggest that "there is a lack of emphasis placed on the development of soft skills by many tertiary education providers" (p. 9).

The paradoxical question that develops from the literature review is, "Why are soft skills often overlooked or undervalued compared to the hard competencies?" Rainsbury, et al. (2002), note:

According to some authors, it is common for commercial organizations to neglect the development of soft skills because of the difficulty in their measurement (Georges, 1996, p. 9). To support the reasoning behind the devaluation of soft skills, Arnold and Davey (1994) mention, unlike hard skills, soft skills are seen to be problematic to demonstrate a link between these skills and desired work outcomes. This need or ability to develop soft competencies has also been stressed in the literature within the SH&E profession. In an article entitled, "Which Competencies Are Most Important for Safety Managers," Blair (1999) notes, "Universities that offer safety degree programs should emphasize communication aspects of safety as well as other interpersonal skills. Many professionals in the field are technically competent, yet may be limited by their ability to communicate effectively." (p. 32)

The OSH profession is practiced in all parts of the globe, and OSH issues continue to emerge in developing countries. External factors such as culture, language, customs, government and religion create additional challenges.

Methodology

This study involved a three-round, mixed-method Delphi study. The Delphi technique was best

Table 1

Summary of Competencies Selected by Professionals & Educators

Competencies	Bloom's taxonomy	RQ #1	RQ #2	RQ #3
Knowledge of how to influence supervisors, managers and owners to achieve safety and health for workers, even in contexts where workers have little value.	Knowledge	X		
Ability to communicate and explain complex issues simply, and in a manner that is understandable within cultural constraints.	Comprehension	X		
Understanding how to engage all levels of an organization.	Comprehension	X		
Understanding of organizational dynamics, employee motivation, work ethic, organizational politics in varying cultures.	Comprehension	X	X	X
Understanding of the vision, values and strategy of their organization.	Comprehension	X		
Understanding the different ways and means of addressing people dependent upon their relative position to yours.	Comprehension	X		
Demonstrate the application of safety philosophies not related to behavior only.	Analysis	X		
Ability to align safety and health risk management strategies with the business planning, budgeting and overall business risk assessment strategies.	Analysis	X		
Ability to speak, to describe, to convince and persuade stakeholders.	Evaluate	X		
Ability to assess, coordinate, plan and act with others within the organization.	Evaluate	X	X	X
Knowledge of governing agencies and applicable regulations within the countries being addressed.	Knowledge	X	X	X
Understanding of the connection between the cultural norm and risk/hazard that the safety program is aimed at mitigating.	Comprehension	X		
Understanding of financial and nonfinancial EHS benefit analysis.	Comprehension		X	
Demonstrate and apply management of change and continual improvement strategies within an organization.	Analysis	X		
Demonstrate knowledge of management systems.	Analysis	X		
Demonstrate the ability to apply the principle that managers are responsible for safety.	Analysis	X		
Ability and heightened awareness to pinpoint clues to casual factors that overwhelmingly affect work subcultures.	Analysis	X		
Awareness of the current culture of safety that exists in the country that is being addressed.	Knowledge	X	X	X
Demonstrate the ability to recognize, accept and competently work within an organization with varying cultural differences.	Analysis	X		
Demonstrate an understanding of global safety management system standards and their requirements.	Analysis		X	
Demonstrate the ability to apply best practices and appropriate safety and health standards regardless of the stringency of regulations/requirements in a country.	Analysis	X		
Demonstrate the ability to write programs that are easily utilized.	Analysis	X		
Demonstrate the ability to learn about and be sensitive to the religious beliefs and practices of the local population.	Analysis	X		
Understanding of the legal requirements for safety and health in other countries.	Comprehension		X	
Demonstrate the ability to understand and apply audit processes to workplace issues.	Analysis	X		
Ability to set global standards of performance (not dependent on local requirements).	Synthesis	X		
Ability to implement safety management systems and understand how they interact with traditional and standard operational management drivers.	Synthesis	X		
Knowledge and skills of continuous improvement such as (ANSI Z10 or ISO 18001).	Knowledge		X	
Understanding of cultural applications of adult learning style and training techniques.	Comprehension	X	X	X
Understanding of the philosophy of authority that extends from government to workers and their safety.	Comprehension	X		
Ability to remove bias that one may have regarding certain culture/countries.	Analysis	X		
Ability to analyze data, spot trends and apply appropriate mitigation based on the analysis.	Analysis	X	X	X
Ability to select, manage and determine both the competence and integrity of personnel.	Synthesis	X		
Demonstrate the ability to apply the management function of control base safety systems on risk.	Analysis	X		
Understanding of and coping with cultural, technical and engineering knowledge.	Synthesis	X		
Understanding of the sources and concepts as well as applying risk-based employer safety responsibilities.	Comprehension	X		

Note. RQ #1 = professional; RQ #2 = educators; RQ #3 = professional and educators.

The expert panel participating in this study consisted of 29 individuals. After meeting minimum qualifications, a total of 16 educators and 13 professionals completed all three rounds of the study.

suiting for this study as it enabled the gathering of opinions from professionals and educators working at distant locations. The technique eliminated the dominance of any participants and allowed the expert panel to identify and develop the competencies independently through multiple cycles of data collection. Data were gathered through the creation of an interactive website.

A three-person panel reviewed and evaluated each round. This group's objective was to verify and screen the results and to evaluate the accuracy and functionality of the online survey tools.

The expert panel participating in this study consisted of 29 individuals. After meeting minimum

qualifications, a total of 16 educators and 13 professionals completed all three rounds of the study. Educators were solicited for participation by contacting ABET-accredited universities and colleges throughout the U.S. Those who participated in this study had either taught or were currently teaching at U.S.-based universities and colleges providing OSH-related instruction at the undergraduate or graduate level.

Current OSH professionals were solicited to participate via telephone conversations and e-mail correspondence. The research team also focused on safety professionals who were active members of ASSE's International Practice Specialty. Practitioners with the CSP designation or equivalent were

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selected mainly to provide their opinion of the practical knowledge that students should have upon graduation from a master's-level OSH program. In total, the professional members participating on the expert panel had a combined 291 years of international work experience in 17 different countries.

During Round 1, both educators and professionals were asked to identify the competencies they feel are essential for graduate occupational safety students to have acquired to be successful in the global workplace. For Round 2, panel members were asked to rate the competencies using a Likert-based scale, (5 = very important, 4 = important, 3 = neutral, 2 = not important and 1 = not required). The competencies with a mean rating of > 4.0 or higher from Round 2 were kept for the development of Round 3.

A one-way analysis of variance (ANOVA) statistical test between subject factor (educator versus professional) as well as for each competency was kept for Round 3. The research team used the one-way ANOVA to determine whether consensus was developing within the group and to check for statistical differences between educators and professionals in the competencies received from Round 2.

Round 3 consisted of either accepting or rejecting the competencies gathered from Round 2. This separation served to differentiate the competencies viewed as important by each participant group (educators and professionals). The final list of competencies and the deliverables of this study were those accepted by both educators and professionals at an acceptance rate of $\geq 90\%$.

Results

This study aimed to identify which competencies are necessary for global safety practice that are in addition to or complement ABET's 2012-13 Program Criteria for Safety and Similarly Named Applied Science Programs at the Master's Level. Recommendations for safety students and professionals who wish to engage in global safety practice were also developed.

At the end of Round 1, the expert panels had identified more than 148 different competencies. Interestingly, the professionals provided 106 competencies while the educators provided 42. The research team attributed this large difference to the years of international work experience the professionals brought to the study. In fact, several professionals identified personal work situations where they felt certain competencies were needed or important. Most educators gave brief responses with limited detail. This difference in the number and detail from the Round 1 responses may indicate a disconnect regarding what is currently needed in the field, especially from a global perspective, or lack of collaboration between academia and the businesses that hire OSH professionals.

In the final phase of the study, the educators and professionals were asked to either accept or reject the competencies individually to complete the final round of the study. The acceptance rate of $\geq 90\%$ was used to determine whether final consensus was agreed on by both participant groups. Thirty-two

final competencies were recommended by the professional group and are identified by the X in the RQ #1 professionals column in Table 1 (p. 47). These competencies answer the research question, "What competencies do occupational safety professionals believe are most important for an occupational safety master's-level graduate to have obtained to be successful in the global workplace?"

The educators were asked to answer the research question, "What competencies do occupational safety educators believe are most important for an occupational safety master's-level graduate to have to be obtained to be successful in the global workplace?" Ten competencies were recommended by the educator group and are identified by the X in the RQ #2 educators column in Table 1.

Six competencies were selected by both educators and professionals at the $\geq 90\%$ acceptance rate. These final six competencies were used to answer the final research question of this study, "What are the similarities and differences between the currently identified occupational safety outcomes as required by ABET and the competencies identified by professionals and educator for the global workplace?" These six competencies are also identified in the RQ #3 professionals and educators column in Table 1:

- 1) Knowledge of governing agencies and applicable regulations within the countries being addressed.
- 2) Ability to analyze data, spot trends and apply appropriate mitigation based on the analysis.
- 3) Awareness of the current culture of safety that exists in the country that is being addressed.
- 4) Understanding of the organizational dynamics, employee motivation, work ethic and organizational politics in varying cultures.
- 5) Ability to assess, coordinate, plan and act with others within the organization.
- 6) Understanding of cultural applications of adult learning styles and training techniques.

Conclusion

Accepted competencies 1, 2 and 6 share similarities to the outcomes required by ABET's program criteria, while competencies 3, 4 and 5 are more nontechnical in nature, and focus on culture and the interpersonal skills or soft competencies. The soft competencies are the knowledge, skills and behaviors that are intangible and not easily measured. These include the ability to communicate and understand the cultural elements of a particular area or region. The hard competencies are more measurable in nature, such as the ability to analyze data, perform risk assessments, and apply relevant standards and codes.

The research team developed Table 1 to visually display the competencies as selected by each group. The table also provides a taxonomy level based on Bloom's Taxonomy model. Educators can use this information to determine the level of cognitive ability needed for each competency. Such information can be used to develop future curricula if the competencies are included in future OSH coursework.

This study was not intended to provide an all-inclusive list of competencies necessary for the global workplace. Instead, it aimed to provide a few build-

ing blocks consisting of competencies agreed on by a select group of educators and professionals with diverse backgrounds and a wealth of experience in education and the international workplace.

The competencies agreed on share many similarities with the current ABET outcomes, especially those that are more measureable and technical in nature. The primary differences were the inclusion of three softer competencies not currently captured by the ABET criteria. Historically, the value of softer competencies has been debated and will likely continue to be debated, especially with respect to their value in the classroom environment and curriculum design.

The expert panel also stressed the need to understand the different types as well as the meaning of culture as it has significant implications on the practice of safety and the OSH profession. The panel specifically noted three types of culture: national, organizational and local (Figure 1). Consequently, the need to be globally competent and to have a global perspective is and will continue to be strongly desired. In addition, an understanding and awareness of the culture that exists in a country or organization regardless of location, is a valued skill needed by current and future OSH professionals.

For educators, this study highlights the need for continued research and dialogue with professionals actively working in the field, particularly about global perspectives. This dialogue would help facilitate the eventual development of new competencies. Such collaboration would also facilitate transmission of best practices as well as other relevant information directly from the field to the classroom. The multitude of information systems and communication technologies allows for this to occur anytime, anywhere.

The continued sharing of experiences and knowledge is a critical element of preparing OSH students for the workforce. To advance the profession, all stakeholders must be willing to engage with local professional organizations and inquire about mentoring opportunities as a way to bridge

the gap between classroom and workplace (Ramsay, Sorrel & Hartz, 2015).

OSH practitioners must master technical competencies as they encompass the fundamental skills of practicing the profession. However, this study illustrates that soft skills are also valuable, especially within the global context. For future OSH professionals and students to be a successful, they must have the soft skills needed to effectively apply their technical know-how. Furthermore, the continued success of the profession will depend on the ability to acquire current and identify new competencies to prevent occupational injuries and illnesses today, tomorrow and wherever they occur. **PS**

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Figure 1

Types of Culture

