Aligning Skills with Industry Expectations

Speakers: Ms. Maureen Jennings, 3M Pharmaceuticals
Dr. Jodi L. Wesemann, American Chemical Society

Industry expectations are in a constant state of flux. Technicians need to be able to grow in their own careers and explore new opportunities as industry, personal, and professional needs change. Resources are available for technicians, technology programs, and students to help manage these changes.

ACS Resource: Skill Standards

One resource is skill standards. Skill standards are lists of the knowledge, skills, and abilities needed to be successful in the workplace for a given profession. Typically developed using industry input, skill standards represent professional benchmarks for current and potential employees.

The ACS ChemTechStandards database contains skill standards for general laboratory and process technicians; a specialty set of skill standards for laboratory analysts in pharmaceutical manufacturing will be added soon. Technician skill standards have also been developed by the Center for the Advancement of Process Technology (www.captech.org), Bio-Link (www.bio-link.org), the National Network for Pulp and Paper Technology Training (www.npt2.org), and ACT (www.act.org/workkeys) among others.

ChemTechStandards, like many skill standards, are arranged in three tiers. Critical work functions are the general responsibilities associated with the job. Key activities are the duties required to complete the critical work function. Performance criteria, or skills, are the specific tasks the employee needs to carry out for each key activity. Each set in the ChemTechStandards database has over 500 skills.
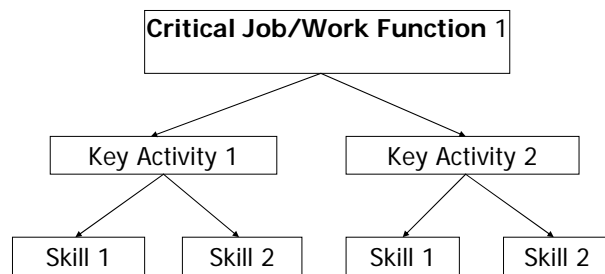
The three-tier structure used in ACS ChemTechStandards

The ChemTechStandards database is free of charge to all users. Because industry needs vary from one region to another, the ChemTechStandards skill sets can be customized by the user. A gap analysis tool is also available, making ChemTechStandards useful for a variety of functions, including:

- Aligning the skills of a new employee with the expectations of the company
- Identifying areas of professional growth for incumbent employees
- Preparing job descriptions
- Aligning academic curricula with industry needs

Although the government has not established skill standards in the U.S., the United Kingdom does; the standards consist of a core set of standards required by all technicians, with additional sets identified for each specialty.

Workplace Resources: 3M Pharmaceuticals' Certification process

All pharmaceutical companies are required to demonstrate compliance to company Good Manufacturing Processes (cGMP's) and business success. Detailed job requirements which are derived from job descriptions, are used to measure how well an employee is performing.

A patch on the uniform identifies a certified technician at 3M Pharmaceuticals.

At 3M Pharmaceuticals, not only must employees become proficient at their job skills, they must also maintain their demonstrated proficiency. They have specific and documented requirements to reach and maintain proficiency.

3M Pharmaceuticals has five levels of proficiency, with the fifth level becoming a subject-matter expert. Trainers specifically hired for technicians determine what training a technician needs. Once an employee achieves third-level proficiency, he or she is entered into the certification program. In the certification program, the employee continues training until fifth-level proficiency is attained. Once the employee has achieved fifth-level proficiency, he or she is certified and considered a subject-matter expert.

Certified employees must complete a certification review annually to document their proficiency and maintain their certification. Reviews and training are conducted by specialized trainers and subject matter experts.

Not national certification

The certification program for 3M technicians should not be confused with a national certification program, which does not yet exist. The question of certification yields a host of issues. One is the fact that there is no nationwide definition of a technician. Another is the fact that industry, while interested in standardization of technician skills, has not expressed an interest in certification. Moreover, there is no certification for research chemists, which weakens the push for chemical technician certification.

While ACS does not offer technician certification, it does approve two-year chemical technology programs that meet certain requirements. Technicians from these programs are educated for life-long technical careers and are often highly sought after for their extensive hands-on experience. Eastman Chemical, for example, will only hire graduates of approved programs into technical positions.

Pulling the resources together

Companies will always need to do training focused on their operating, quality, and manufacturing processes. Documentation such as skill standards and job requirements will allow technicians, educators, and trainers to determine which skills are expert-level, and which need to be developed.

Follow-up Activities

The following are suggested activities for aligning personal skills with industry expectations:

- Conduct a focus group with representatives from industry and academia. Use the ChemTechStandards database (or another database) to compare industry needs with program outcomes.

- Conduct a focus group of industry supervisors and technicians. Use the ChemTechStandards database (or another database) to compare current skill level of the technicians with industry expectations. Develop an action plan to document expert-level skills and achieve proficiency in other areas.

- Develop a certification program for local or regional technicians.

- Use the ChemTechStandards database (or other database) to write out job descriptions and identify areas of growth.