

Strategies for Coordinating Career Development Throughout the Enterprise

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No one sector of the chemical enterprise has all the answers. Industry cannot afford to continuously train new employees and re-train transferred employees. Academia needs resources and industry input to develop educational programs and support from the community to maintain them. Professional societies have resources to offer but often lack adequate promotion.

Only by combining the resources of industry, academia, professional societies, workforce organizations, and the technicians themselves can successful educational and career development programs be created and maintained.

Vested-interest partnerships with mutual benefits

Successful partnerships are not one-way; everyone must contribute and everyone must benefit. In the early 1990's, a group of companies in Pennsylvania realized their employees came to be technicians through a variety of pathways. To make sure employee backgrounds all included the elements needed by high-performing technicians, the companies partnered to develop a training program.

The companies approached Bidwell, a non-profit training center in Pittsburgh dedicated to vocational training for unemployed or displaced workers. The companies worked with Bidwell to build a laboratory and develop a year-long training program. Each participating company has a representative on the program's advisory board, providing continuous improvement to the program.

Pooling resources can help partnerships get off the ground. When Elaine Johnson was the tech prep coordinator at City College of San Francisco, she tried to target high school students for her program. Finding high school students uninterested in chemical technology, she partnered with the local Chamber of Commerce and found a great market in adult learners. Armed with a strong student body, the program took off and even attracted interest from the high school students.

Now Johnson uses the lessons she learned as coordinator to direct Bio-Link, founded with support from the National Science Foundation's Advanced Technical Education (NSF-ATE) program, to pool resources from industry, academia, and the community to advance biotechnology programs across the country.

Some become "one-stop shops" for all of a business's needs. By providing education and training to the technicians at all stages of their career, a program can ensure continued interest by the company. This approach has been highly successful for Houston Community College, which has specific training programs for Shell and

Goodyear, in addition to more general chemical technology programs that prepare technicians for careers in the company of their choosing.

Understanding policy is also important. When Randy Parker worked with Partnerships in Environmental Technology Education (PETE), he found that technicians did not have signing authority, because a Bachelor's degree in any major was valued higher than an associate's degree in chemical technology. Consequently he has focused on constant, open communication with industry about the value of associate-level chemical technology degrees.

Understanding the needs of all the partners is also important. For example, the pulp and paper industry tends to be very rural, and students of pulp and paper programs tend to be isolated. Therefore, distance education techniques are vital to the success of a pulp and paper program.

Top 7 myths in partnerships

Partnerships do not always go smoothly. The following are seven attitudes that can sabotage a partnership and how to work around them.

- 1) **I have all the answers.** Historically, industry has had to train its employees for companies' individual needs, academia has been in charge of instruction, and professional societies have focused on the employees themselves. Isolation can lead to the belief that one person has all the answers. In truth, all parties have something to contribute and need to be open to new ideas.
- 2) **I can't make this decision on my own.** Sometimes, people are unwilling to make a decision, usually out of fear of reprisal. Yes, mistakes will be made, especially in a new program. However, if no decisions are made, nothing will get done, and there will be no chance for success. Partners have to try.
- 3) **If it failed before, it will fail again.** No one wants to repeat mistakes. However, partnerships can fail for many reasons—an unfortunate mix of personalities, lack of full cooperation, a sudden change in the work environment. It may be necessary to try several times before finding the right people for a partnership to succeed. Partnerships are too valuable not to try again.
- 4) **What do they want from me?** Industry partners may fear that they are needed only for their money, while educators may feel they are being asked to train automatons according to industry whims. However, a true partnership is one in which everyone benefits. Industry must gain a high-performing workforce, while academia must get the resources they need to develop an effective educational program.
- 5) **I can't talk to these people!** The culture of academia and industry are vastly different, as are the languages spoken. Successful partnerships can arise, however, if everyone focuses on a mutual goal and remains open-minded.
- 6) **I don't need a technician; I need a lab analyst.** Technicians have a wide variety of job descriptions and job titles. However, a well-designed chemical technology program can prepare graduates to fill a wide variety of roles. Partners should look at needs, not vocabulary.
- 7) **We'll need to start from square one.** Industry, academia, workforce organizations, and professional societies have a wide variety of resources already developed. Partners should try to combine these materials, rather than try to recreate materials from scratch.

Moving forward

Although much of the technician education discussion focuses on new technicians, incumbent technicians also benefit from continued development. Continuing education courses are necessary as instrumentation and technician duties change. Moreover, Bachelor's degrees are becoming increasingly important to employers; incumbent technicians with associate's degrees will need to be prepared for this shift.

As with most careers, mentoring is important to the career of a chemical technician. Some chemical technology programs assign mentors to their students, and these mentors follow the graduates throughout their careers. Additionally, some chemical technology programs encourage their graduates to come back and teach in the programs; they provide valuable real-world experience in a mentor-like fashion.

Follow-up activities

- Host a panel discussion with representatives from local industry, academia, and professional societies to explore the resources and opportunities available for technician development.
- Defeat myth #1: Create a list of everything you think you have and need for technician development. Have representatives from local industry, academia, and professional societies do the same. Exchange lists to see where collaboration can save everybody time and money.
- Reach out to the technician community. Have a discussion about what resources they need and what is available. Be sure to include technicians with alternative job titles, such as lab analysts, entry-level chemists, operators, and so on.