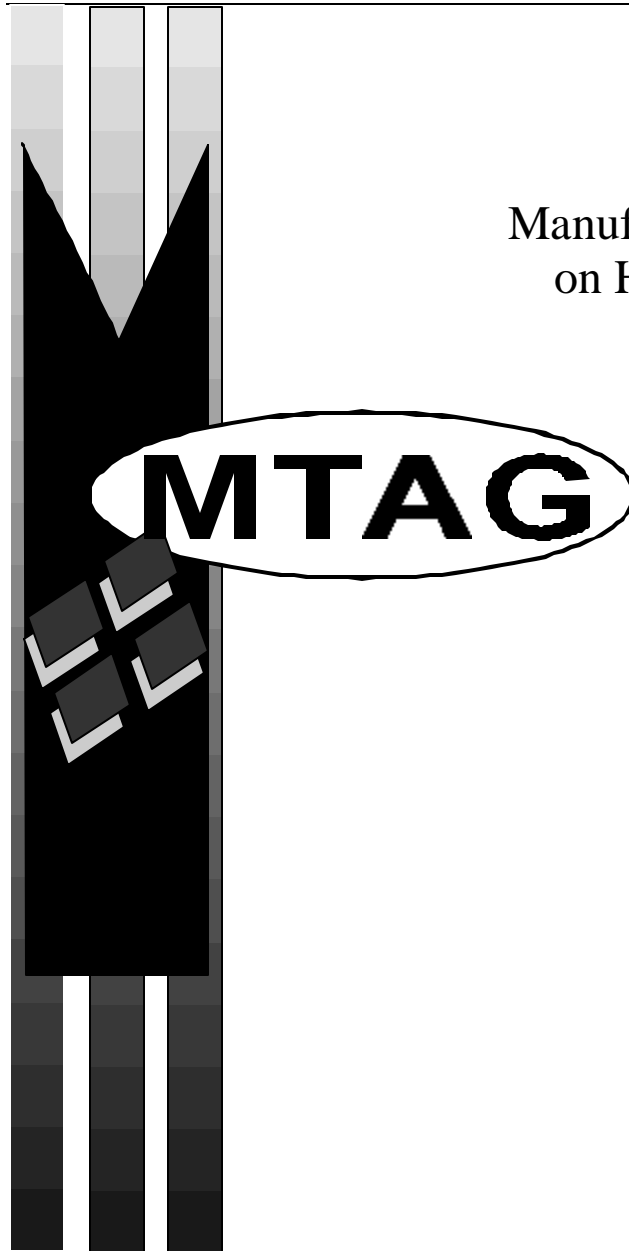


Prepare Tech Prep Students Today for the Workforce Tomorrow

A Guide for
Manufacturing Companies
on How to Get Involved



March 1995

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Why Get Involved with Tech Prep Programs?

The success of manufacturing companies relies on the ability to deliver high quality products and services. A well-trained, productive workforce is the key to delivering quality in today's competitive, global economy. Skilled, technical jobs are increasing in manufacturing companies—jobs that rely on workers who not only can learn technical skills quickly, but who are flexible, adaptable, and highly motivated. Because 80% of today's high school graduates do not go on to complete an undergraduate college degree, many companies recognize that young people must be prepared for employment during high school and community college. By participating directly in programs that prepare students at these levels for work, manufacturers can play an important role in shaping their future workforce. Based on their needs and interests, companies may offer a variety of work-based learning activities that expose students and teachers to the skills and proficiencies needed in modern workplaces.

Partnering with Tech Prep programs in high schools and community colleges is an excellent way manufacturers can invest in their future workforce.

How Can Manufacturers Partner with Tech Prep?

Companies wishing to become Tech Prep partners can choose their level of commitment and cost. Activities range from limited to quite extensive involvement. Manufacturers may:

- ◆ Conduct Plant Tours for Tech Prep Students
- ◆ Release Personnel to Serve as Career Speakers
- ◆ Release Personnel to Teach in Schools
- ◆ Donate Equipment and Material to Tech Prep Schools
- ◆ Give Preferential Hiring to Tech Prep Graduates
- ◆ Award Grants for Tech Prep Curriculum Development
- ◆ Award Tech Prep Scholarships
- ◆ Serve on Tech Prep Advisory Committees
- ◆ Offer Teacher Internship Programs
- ◆ Provide Job Shadowing Experiences
- ◆ Provide Mentors for Tech Prep Students
- ◆ Offer Student Internships

Each of these activities is an important component in developing a future workforce. Some require very little time and resources. Other activities, such as student internships, require more coordination and commitment from a company.

Each activity is defined and discussed in more detail in the following pages. After reading these activity descriptions, manufacturing representatives should have enough information to begin thinking about how they would like to become involved with Tech Prep.

Additional Factors to Consider

Employer Focals

When a manufacturer wishes to launch a work-based learning activity, it is important to designate a point person, or employer focal, to assume initial responsibilities. Depending on organizational structure and individual personnel, the employer focal may do the “front end” work involved with proposing, designing and gaining approval for a work-based learning program. The employer focal may also take charge of coordinating program implementation. In some cases, a committee of company employees may take the place of an employer focal in either the design or implementation phase. In all cases, it is important to include representation and input from employee unions in the design of work-based learning programs.

Key responsibilities for an employer focal include: overseeing daily implementation, helping balance the interests of program participants, serving as the linchpin that connects program partners and assures effective communication, coordination of activities, and ongoing program assessment.

Recruiting Employees

Company employees provide the foundation for students’ learning experiences at the worksite. Anticipating extra demands placed on their time, department supervisors and staff may have initial misgivings about getting involved in work-based learning activities. Address their concerns while highlighting the company benefits as well as the personal and professional rewards of working with Tech Prep students. Make sure employees understand the concept of Tech Prep and how it furthers workforce development.

Some ways to recruit employees include: using peer to peer connections, having upper-level management sell the program, making sure to address key questions and concerns (job security, liability, potential impact on productivity), clarifying potential roles to play, building in support systems, and rewarding employees for their participation.

Conduct Plant Tours for Students

Purpose

Offering tours is a good way to introduce students to manufacturing environments. Through plant tours, students can gain initial exposure to the aspects that comprise an industry, or to selected elements, such as technology, finance or management. A plant tour may be organized to reveal career opportunities in one or more department, or to demonstrate product flow from conception to completion. Generally, overviews of an entire business operation are less useful for high school students. A preliminary discussion between teacher and employer focal should guide how a plant tour is focused and organized.

Process

In a preliminary discussion, the employer focal and teacher should:

- ◆ Determine how the tour will be focused.
- ◆ Identify number of youth involved and whether the group will be divided.
- ◆ Determine the optimum length of time for the tour, and how it will be scheduled within the day.

Before the tour, the employer focal should:

- ◆ Plan out and time the tour route, allowing for questions and movement time.
- ◆ Identify key employees for students to meet along the way, and seek their approval.
- ◆ Consult the company legal department regarding liability and safety issues.
- ◆ Provide for any necessary safety equipment.
- ◆ Prepare any useful handouts, such as organizational charts, applications, hiring procedures, product designs, etc.
- ◆ Determine whether the company can provide lunch or any “takeaways” such as logo pins, magnets, etc.

During the tour, the employer focal should:

- ◆ Stay aware of time and try to remain on schedule.
- ◆ Help engage all students by asking prompting questions, i.e. “What do you suppose is happening in this area? Where do you think the product goes from here?”
- ◆ Encourage other employees to talk about their work.

Payoff

- ◆ Students begin connecting academics with their applications in the workplace.
- ◆ Students receive initial exposure to careers, technologies, aspects of industries, organizational structures, and how people work together within a company.
- ◆ Employers play a role in helping youth make informed career choices.
- ◆ Employees benefit from describing the roles they play within the organization.

(Conduct tours, cont.)

Pitfalls

- ◆ A successful tour depends on careful pre-tour coordination between employer focal and teacher. Especially important is to select a focus and not have the group too large to be manageable.
- ◆ Remember that young people get restless when talked at too much. Vary talking with demonstrating and showing.
- ◆ Make sure everyone along the tour route knows there will be students in the area. Employees should be mindful of unsafe conditions and provide extra watchful eyes for students that may wander off the tour.
- ◆ If there are types of clothing that are restricted in the work environment, notify the school in advance. This might include no high heeled or open-toed shoes. Students dressed inappropriately should not be taken on the tour.

Costs

- ◆ Time to coordinate, plan and guide the tour.
- ◆ Cost of safety equipment such as eye protection or hearing protection.
- ◆ Cost of student lunches or give-aways if provided.

Release Personnel to Serve as Career Speakers

Purpose

Encouraging company employees to speak to Tech Prep students about their work is an excellent partnership activity. Through sharing their own career path and activities, Career Speakers help students understand the preparation needed for high-skilled jobs in manufacturing workplaces. As a result, Tech Prep students gain awareness of the wide range of occupations available. Down the road, companies will benefit from a better informed and prepared workforce.

Process

The employer focal should:

- ◆ Gain company approval for releasing employees to serve as Career Speakers.
- ◆ Determine how much release time to allow and how many employees may be involved.
- ◆ Contact the local Tech Prep consortium or school administrators to announce the availability of Career Speakers.
- ◆ Develop a tool or instrument for surveying employees regarding their interest in guest speaking. Acquire information regarding employee's current position, best times to leave work, and desired speaking topics.
- ◆ Compile responses and send to consortium or school contact.

Teachers and Career Speakers should coordinate to:

- ◆ Schedule speaking event.
- ◆ Discuss student audience, including group size, ages, previous career exposure and other pertinent information.
- ◆ Discuss content of presentation and modes of delivery that will engage youth.
- ◆ Determine what audio or visual aids, or additional equipment will be needed and who will be responsible for supplying.
- ◆ Students learn most when they can see, hear, and work with the information provided. Discuss how to make the presentation come alive.

During the speaking event, the Career Speaker should

- ◆ Strive to make eye contact at least once with everyone in the group.
- ◆ Modulate the voice and ask questions frequently; don't call on the same students over and over.
- ◆ Make use of audio or visual aids or questions to avoid talking longer than 10 minutes without interruption.
- ◆ Use humor and be yourself. Share any interesting anecdotes that illustrate your own career path.
- ◆ Make sure to leave at least 10 minutes for questions.

Afterwards:

- ◆ Teacher and Career Speaker should debrief regarding visit.
- ◆ All participants should evaluate the experience and make appropriate modifications.

(Provide Career Speakers, cont.)

Payoff

- ◆ Speaking in the schools provides educators and students with current knowledge regarding manufacturing careers, technology, etc.
- ◆ Career Speakers gain firsthand experience of today's students.
- ◆ Employees sharpen their speaking and presentation abilities.
- ◆ Career speaking fosters positive individual relationships between company employees and teachers, paving the way for future partnership activities.
- ◆ Students meet people with good jobs in fields using skills they are learning, providing motivation for completing Tech Prep.
- ◆ The company builds visibility within the community and expands its pool of potential employees.

Pitfalls

- ◆ Students are not always polite, attentive audiences. Support Career Speakers by giving them adequate time to prepare and equipment to accompany their presentations. Encourage them to debrief afterwards, and to refine their techniques, if necessary.
- ◆ Help ensure that the consortium or education contact can make use of interested employees. Poor coordination may result in some speakers not being utilized.

Costs

- ◆ Coordination time involved with developing policy, employee survey, connection with school or consortium.
- ◆ Career Speaker release time.
- ◆ Cost of materials for handouts and presentations.

Release Personnel to Teach in Schools

Purpose

Encouraging company employees to work in the schools is a good way to demonstrate workplace realities to students. Depending on the needs and interests of the company and the school's Tech Prep program, employees may be released to the schools to:

- ◆ tutor students in specific content areas
- ◆ teach a class

Through these activities, Subject Matter Experts (SMEs) can help students see the “real world” applications of what they are learning in class. In addition, employees can communicate up-to-date industry standards, levels of proficiency required in various technical arenas, and the academic requirements of their own jobs. As with plant tours, releasing personnel to teach in schools is an excellent method for beginning a partnership between a manufacturer and a Tech Prep program.

Process

The employer focal should:

- ◆ Convene decision makers to determine company policy regarding employee release to the schools, including eligible employees, number of hours per week, etc.
- ◆ Develop a tool for surveying employees regarding their interests, abilities, and availability to tutor, teach, or present information to Tech Prep students.
- ◆ Coordinate with school principal and/or Tech Prep teaching staff regarding the company's availability for these activities.

The employer focal and teacher should:

- ◆ Coordinate regarding types of involvement, subject matter, scheduling of days, time and amount of time for activities selected.
- ◆ Develop a consistent process for connecting interested employees to appropriate teaching staff.

Before scheduled activities, SME and teacher should:

- ◆ Discuss how to tailor teaching or tutoring to current classroom activities or provide foundations for coming lessons.
- ◆ Determine the information to share with students about employee, position in company, etc.
- ◆ Discuss the teaching methods that will be successful to engage students and address multiple learning styles.
- ◆ Coordinate regarding needed equipment, parking, and visitor arrangements.

(Release Personnel, cont.)

During activities, SME should:

- ◆ Stay alert to students' level of awareness, eye contact and body language. Modify approach when necessary.
- ◆ Make sure to vary activities - discussion, demonstration, hands-on activities and questions. Use a variety of audio and visual aids.
- ◆ Check frequently for understanding of concepts presented. Ask questions.

Following activities:

- ◆ Teacher and students should send thank you letters.
- ◆ SME and teacher should debrief and schedule future activities, making modifications as appropriate.

Payoff

- ◆ Students experience direct connections between learning and workplace applications.
- ◆ Students receive additional individualized attention.
- ◆ Employees sharpen their teaching and speaking abilities.
- ◆ Relationships between individual teachers and employees strengthen the company's partnership with Tech Prep.

Pitfalls

- ◆ Make no assumptions regarding school's available equipment, procedures, etc. When in doubt, ask.
- ◆ High school students can be tough audiences. Support employees in moving out of their comfort zones. Encourage them to share their experiences afterwards, and help them refine their techniques.

Costs

- ◆ Time for employer focal to help define company policy, survey employees, connect with schools and funnel requests.
- ◆ Time for release of involved employees.
- ◆ Cost of materials for handouts and presentations.

Donate Equipment and Material to Tech Prep Programs

Purpose

Donating equipment and material to Tech Prep schools gives students realistic equipment to learn and use for “hands-on” experience. These donations may provide tax incentives for the donating company, and may make it possible for teachers to teach technical subjects not previously offered. In this way, companies benefit by helping train their potential workforce using the actual tools and skills of manufacturing environments.

Process

- ◆ After identifying surplus equipment or materials, contact school representatives to make them aware of the availability of the items, and inform them of the process for accessing the items.
- ◆ Advertise or publicly acknowledge that this donation was made specifically to a Tech Prep school, based on its commitment to systemic change through the Tech Prep model.
- ◆ Appropriate materials to donate include: production materials such as aluminum or other metals, corporate training materials, subject specific training videos, blueprints, work order examples, etc.
- ◆ If training or set up instructions are required, make company personnel available to the school site upon delivery and set up of the equipment.
- ◆ Include user’s manual and any training materials that are available for the equipment.
- ◆ Company training materials such as manuals, blueprints, and videos should be cleared for release through appropriate company channels.
- ◆ The school should arrange for the equipment or material to be annotated on the appropriate school records.
- ◆ Ask the school how it acknowledges donations of equipment and materials. Newsletter, brochure or other acknowledgments foster good public relations.

Payoff

- ◆ Tax credits for donations may be realized.
- ◆ The company may benefit from hiring Tech Prep students skilled in use of company equipment and processes.
- ◆ Students benefit from hands-on practice with equipment and materials actually used by industry.
- ◆ The school benefits from obtaining equipment or materials at no cost, thereby maximizing school resources.

Pitfalls

- ◆ Do not donate hazardous materials unless safety procedures and methods for disposal are clearly in place.

- ◆ Develop plans at the time of the donation for the future disposition of the equipment after its use by the school ends.

(Donate Equipment, cont.)

- ◆ Determine at the time of the donation who will be responsible for repairs, maintenance or repair parts.
- ◆ Ensure accurate documentation accompanies each donation to validate the company tax credit and provide accountability on school property records and inventory.

Costs

- ◆ Coordination time
- ◆ Repair or maintenance commitments
- ◆ Delivery expense (if applicable)
- ◆ Hazardous materials disposal guidelines (if applicable)

Give Preferential Hiring to Tech Prep Graduates

Purpose

Preferential hiring of Tech Prep graduates serves two purposes. First, it assures the company of candidates with solid foundations in technical skills, academics, and the ability to function effectively in the workplace. Second, giving preference to Tech Prep graduates is a continued validation of the industry-based competencies that comprise the Tech Prep curriculum. This is an example of focus in action. The Tech Prep graduate's educational experiences were focused on the direct needs of the industry, including a strong emphasis on building high level communication and problem solving skills. In the long run, these candidates will require less basic skills training and be productive sooner than non-Tech Prep candidates. Both aspects result in cost savings for manufacturing employers.

Process

- ◆ When advertising positions, indicate Tech Prep as a preferred qualification.
- ◆ In recruitment notices, language such as "Tech Prep students who have completed their program of study are encouraged to apply" will demonstrate preference.
- ◆ Ask to see candidates' portfolios. These should demonstrate their accomplishments.
- ◆ Provide information on the Tech Prep program and the qualifications of Tech Prep graduates to all hiring personnel, line managers, and supervisors.
- ◆ Keep track of employees with Tech Prep backgrounds. Conduct follow-up studies to confirm hiring preference policy and validate cost savings.
- ◆ Utilize Tech Prep graduates as peer-coaches for new employees.

Payoff

- ◆ Giving preferential hiring to Tech Prep graduates should reduce a company's overhead costs associated with hiring, training and acclimating new employees.
- ◆ A company giving preferential hiring to Tech Prep graduates will be hiring someone trained on the standards established by the industry. Candidates are better prepared when they come in the door.
- ◆ A preference for Tech Prep graduates provides an incentive for students while in school. They will be able to equate school effort with future rewards.
- ◆ Preferential hiring strengthens the marketing of Tech Prep programs.
- ◆ Students from a Tech Prep program have chosen their field of study based on interests, aptitude, experiences, and motivation. Rather than just looking for a job, Tech Prep graduates have focused career plans.

(Giving Preferential Hiring, cont.)

Pitfalls

- ◆ Remember that Tech Prep graduates from different career clusters will not share the same technical foundation skills. All graduates, however, should have appropriate academic foundations, as well as the ability to learn and adapt.
- ◆ Until Tech Prep programs have been in place several years, availability of Tech Prep candidates may be limited.
- ◆ Some students may qualify as Tech Prep graduates, and not be aware of this classification. A screening interview or transcript review process can reveal qualifications. Look for applied academic classes, sequential technical courses, and community or technical college certificates or associate degrees. Training should be coupled with some workforce experience in the same vocational field.

Costs

- ◆ Changing existing recruitment announcements, position descriptions and ads.
- ◆ Personnel time for awareness briefing of hiring personnel, line managers, and supervisors.
- ◆ Personnel time to conduct follow up study on Tech Prep employees.

Award Grants for Tech Prep Curriculum Development

Purpose

Providing grants for Tech Prep curriculum development allows manufacturers to participate in a direct way with education, your supplier. Companies can offer input and exercise control over the content of technical instruction. Many times, existing curricula can be adjusted or specifically tailored to meet the changing needs of the regional workforce. Other times, new programs must be developed, including competencies, delivery methods, and supporting equipment. Grant dollars should be specifically allocated for technical specialties needed to support required skills. The result will be focused, outcome-based courses directly linked to employer established specifications. In some cases, these same courses can be taught to existing employees for skill enhancement.

Process

- ◆ Work with an employee group to identify the skills needed that are not currently demonstrated by the entering workforce. It may be necessary to prioritize identified skills.
- ◆ Seek company approval for awarding curriculum development grants based on this needs assessment. Determine how much funding is available.
- ◆ Contact the community or technical college that supports your geographical area. Its Tech Prep Advisory Committee or Consortium will be the most effective avenue.
- ◆ In conjunction with the appropriate department chair or course manager, review required skills and noted deficiencies. Jointly, devise ways to close the gap between desired skills and those currently demonstrated.
- ◆ Agree to a plan.
- ◆ Assess the financial support needed to execute the plan.
- ◆ Develop a process for awarding and allocating the funds.
- ◆ Be specific regarding how grant funds should be used (curriculum development hours, equipment, printing, materials, etc.).
- ◆ Award funds based on the plan.
- ◆ Provide input in developing and validating competencies.
- ◆ Negotiate timelines and milestones for the project.
- ◆ Review completed curriculum for approval.
- ◆ Provide process documentation as required.
- ◆ After the curriculum is used:
 1. Assess the skills of program graduates against the desired skills in the workplace. Conduct a cost/benefit analysis.
 2. Provide program feedback to curriculum developer or course manager.
 3. Make modifications in grant process as needed. Secure continued company commitment.

(Award Grants, cont.)

Payoff

- ◆ Potential hires demonstrate higher level of desired skills.
- ◆ Costs associated with the selection, hiring, training and acclimating of new employees are reduced.
- ◆ Company plays a direct role in educational program and workforce development.

Pitfalls

- ◆ Spend the time it takes to clearly identify needed skills. An unclear focus may result in little or no return.
- ◆ Unclear or unreasonable expectations by either party can result in less than desired outcomes.
- ◆ Industry should guide and validate the competency development, and educators should develop the curriculum to support competencies.
- ◆ Avoid open-ended project schedules. Agree to a realistic timeline. Adjust as needed, but maintain adherence to the project focus and basic timeline, as feasible.
- ◆ Ensure consistent commitment and regular communication between project personnel.
- ◆ Remember you must adhere to state and federal guidelines for educational programs.
- ◆ Assign tasks to various partners based on areas of expertise.

Costs

- ◆ Amount of grant award.
- ◆ Personnel time for identification of skills, coordination, curriculum review and evaluation.
- ◆ Administrative costs associated with financial record keeping.

Award Tech Prep Scholarships

Purpose

Awarding qualified students Tech Prep scholarships to continue their education in community college or technical school is a good way to build a workforce with higher levels of skills. Community college full year scholarships are reasonably priced when compared to most four year institutions. Full or partial scholarships may be awarded.

Process

- ◆ Work with a group of employer representatives to develop a proposal for a scholarship program. Include award amounts and participating colleges.
- ◆ Obtain required approvals.
- ◆ Determine desired student qualifications.
- ◆ Develop scholarship application. Ask company personnel department to review for appropriate language.
- ◆ Advertise scholarship opportunity through Tech Prep advisory committees or consortia.
- ◆ Determine screening process and review panel.
- ◆ If feasible, develop interview process and questions.
- ◆ Conduct screening and interviewing.
- ◆ Review and rank scholarship applicants.
- ◆ Notify recipients and other applicants of selection status.
- ◆ Provide a press release for scholarship award(s).
- ◆ Provide award recipients' names to participating college.
- ◆ Maintain quarterly contact with scholarship recipients.
- ◆ (Optional) Provide mentoring, internship, or other work-based learning opportunities for scholarship recipients.

Payoff

- ◆ Students with established relationships with the company become a committed future workforce.
- ◆ Awarding scholarships creates good will in the community toward the company.
- ◆ The company may be eligible for tax advantages in the future.

Pitfalls

- ◆ Avoid unclear selection criteria that may result in a poor match between student focus and scholarship focus.
- ◆ Ensure that recipients know that scholarships are not a promise of future employment.
- ◆ Lack of timely notification may result in lost opportunities for students and the company.
- ◆ Be sure that screening criteria are in accordance with equity and non-discrimination practices.
- ◆ Clearly identify participating colleges in the application process.

(Award Scholarships, cont.)

Costs

- ◆ Scholarship costs
- ◆ Personnel time associated with development, screening, selection, and in-process coordination.
- ◆ Administrative costs associated with financial record keeping.

Serve on Tech Prep Advisory Committees

Purpose

Serving on Tech Prep advisory committees allows manufacturers to provide direct input into program development, outcomes, and management. This participation can involve various positions, levels of participation, or commitment. Input from industry is vital to maintaining the effectiveness of the Tech Prep program. Students, the educational community and regional businesses all stand to benefit from this involvement.

Process

- ◆ Contact the Tech Prep consortium in your area.
- ◆ Discuss with the consortium director your willingness to get involved. The director can advise you regarding where your participation will be most appropriate and effective.
- ◆ Ask the consortium director to brief you on current projects. This will help you integrate into existing project teams.
- ◆ Select the project or process to which you wish to commit.
- ◆ Attend planning, process, and project meetings.
- ◆ Provide industry expertise as appropriate, including input on subject matter and management.
- ◆ Share Tech Prep information in staff meetings, departmental briefings, with colleagues, and others.
- ◆ Promote Tech Prep at community organization meetings such as Rotary, Kiwanis, and chamber of commerce.
- ◆ Act as an interface between industry initiatives and the associated educational requirements.
- ◆ Recruit other business representatives to get involved.

Payoff

- ◆ Advisory role ensures curriculum aligns well with industry needs.
- ◆ The company participates in the development and delivery of technical programs.
- ◆ The educational community gains greater awareness of industry needs.
- ◆ Employees provide benefits for students, the educational community and regional employers.
- ◆ Technical expertise is shared with future workers.

Pitfalls

- ◆ Time demands on committee members may be significant.
- ◆ A supervisor or manager who does not support the Tech Prep concept can create a barrier to participation. Make sure to get key people on board.
- ◆ Be careful not to over commit yourself. Be clear about how much you are willing to do.
- ◆ Clarify your role. Are you representing your company, your community, your children? All three?

(Serve on Committees, cont.)

Costs

- ◆ Work and/or personal time
- ◆ Travel costs to and from meetings

Offer Teacher Internship Programs

Purpose

Teacher internships provide educators with direct experience with how technical and academic skills are applied in a modern workplace. For many educators, this is their first opportunity to view a modern manufacturing workplace. The result is valuable insight into the skills and academic requirements needed by students when they transition to work. In addition, teachers can update technical skills for use in the classroom, and manufacturers can help shape curriculum design and delivery. If the participating company is also sponsoring a student intern program, coordinating both within the same school will maximize return.

Process

- ◆ Develop program proposal including:
 1. Objectives, budget, timelines and project plan.
 2. Determine if interns will be paid and if so, how much.
 3. Coordinate with contracting agency, such as a consortium, if appropriate
 4. Obtain appropriate approvals.
- ◆ Develop internship program description including:
selection criteria, potential intern project descriptions, application and selection process.
- ◆ Advertise the program and potential projects through participating consortia.
- ◆ Conduct informational meeting for interested teachers. Distribute applications.
- ◆ After consortia prescreens:
review applications based on selection criteria, select interns, and notify all applicants.
- ◆ If using a contract agency, coordinate all required paperwork.
- ◆ Recruit company personnel to act as mentors/sponsors for teacher interns.
- ◆ Conduct orientation meeting to discuss schedules, expectations, projects and available resources.
- ◆ Introduce interns to mentors. Encourage mentors to maintain contact with the incoming intern prior to the start of the program.
- ◆ Mentor and intern develop project schedule/plan and secure necessary approval, resources, and access prior to the start of the program.
- ◆ Finalize administrative requirements (contracts, access clearance, work schedule, etc.)
- ◆ Schedule joint activities such as tours or classes.
- ◆ Host internship kick-off meeting with all interns and mentors. Include tour or classes scheduled.
- ◆ Conduct interim reviews of progress and barriers. Adjust as necessary.
- ◆ Provide regular meeting times for interns/mentors to discuss experiences and share successes.
- ◆ Have interns present project overviews at a recognition event for interns, mentors, school and consortia personnel.
- ◆ Provide feedback mechanism for all participants.
- ◆ Coordinate continuing education credits or clock hours awarded.
- ◆ Conduct a follow-up study several months into the school year to determine effectiveness of internships in terms of classroom applications.
- ◆ Hold quarterly reunions of the interns to share best practices and develop a network. Invite interns to present their experiences at regional conferences.

(Teacher Internships cont.)

Payoff

- ◆ Internships give valuable “world of work” experience to the teachers of tomorrow’s workforce.
- ◆ Provides school-based advocates for other Tech Prep activities and builds rapport between mentors and interns.
- ◆ Allows educators to validate technical competencies and curriculum content
- ◆ Gives educators foundation to re-evaluate and adjust course content and competencies.
- ◆ Provides for direct influence on how technical skills are taught and learned.
- ◆ Helps the company understand the world of education. Helps educators understand the company. Increased communication and understanding furthers additional integration of academic and technical learning.
- ◆ Educators who are attuned to the needs of the business community will better prepare students to enter the world of work.
- ◆ Business and educational relationships can be used to identify prospective candidates for special projects and programs such as student internships, industry task teams, competency validations, career speakers, and other collaborative efforts.

Pitfalls

- ◆ Poorly defined intern projects can result in activities that provide little or no return for the company or the intern.
- ◆ Ensure that expectations of teacher interns are crystal clear.
- ◆ Make sure all projects focus on curriculum development, process familiarization, or other techniques such as Total Quality Management.
- ◆ Avoid general overview projects. These may find little transfer to the classroom.
- ◆ Seek an even balance between academic and vocational teacher interns.
- ◆ Teams of interns, academic and vocational, will provide a broader curricular focus. Work to ensure team members are compatible.
- ◆ Ensure that mentors are accessible during the period of the internship.
- ◆ Mentors should be selected based upon interest rather than assignment.

Costs

- ◆ Coordination and management time.
- ◆ Intern salaries
- ◆ Transportation costs associated with travel between meetings, tours, etc.
- ◆ Meeting facilities and refreshments for periodic meetings.
- ◆ Follow up study and evaluation.

Provide Job Shadowing Opportunities

Purpose

Many of the technical careers within a manufacturing company are unknown to students. Inviting Tech Prep students to job shadow employees is an excellent way to increase career awareness. Job shadowing allows students to observe employees performing their daily activities, helping students focus and refine their future career choices. For the company, offering job shadowing opportunities helps provide the foundation for a qualified and motivated pool of candidates. It boosts morale for employees to share their experiences with others, and communicates to students the high level of skills, both academic and technical, that are required by particular jobs.

Process

The employer focal should:

- ◆ Partner with education representatives to develop the job shadow program. A point of contact initially might be the director or coordinator of the local consortium. He/she will be familiar with the programs in place at each school, which vary.
- ◆ Decide which Tech Prep program and students to target. This decision should include age and grade level of students.
- ◆ Work with company decision makers and coordinate with educators to determine which careers are appropriate for students to shadow.
- ◆ Resolve liability, safety and security issues.
- ◆ Determine how many job shadowing experiences are reasonable to offer in a designated period of time (in one day, over a week, one semester, etc.)
- ◆ Survey employees to determine those interested in allowing students to shadow them.
- ◆ Develop with educators and other company representatives specific job shadowing guidelines. These guidelines might include topics for the employee to discuss with the student. Most school-based job shadowing programs provide students with interview questions to ask. Provide input to the development of these questions.
- ◆ Specify responsibilities and develop checklists for all parties. What will the company representative be responsible for? What will the employee be responsible for? What will the educator be responsible for? What will the student be responsible for?
- ◆ Determine the length of the job shadowing opportunity. A typical experience lasts from three hours to one day.
- ◆ Select employees from among those interested based on the career goals or pathways of students, or as indicated by school personnel.
- ◆ Meet with employees that will be shadowed to prepare them for their student's visit. Topics should include the purpose of the program, suggestions on how to engage the students, coordination of schedules, confidentiality and safety issues, and other elements as appropriate to the worksite.
- ◆ Schedule the shadowing experiences. These may take place all on a specified day, or be individually scheduled.
- ◆ Make sure shadowed employees have an opportunity to debrief, evaluate the experience, determine their interest in providing another job shadow, and make modifications as needed.

(Provide Job Shadowing Experiences, cont.)

- ◆ If students are staying for an entire day, provisions for lunch or brown-bagging should be made.
- ◆ Notify students in advance of clothing restrictions such as high heeled shoes, shorts, etc. .
- ◆ Have students complete an interview questionnaire and an evaluation of the day's activities.
- ◆ Ask students to write and send thank you letters to the people they shadowed.
- ◆ Compile and review evaluations.

Payoff

- ◆ Students gain a firsthand perspective of what adults actually do in careers of interest to them.
- ◆ The company fosters a more skilled and motivated future workforce by helping students make informed decisions about careers.
- ◆ Students learn the technical and academic requirements of specific careers, as well as increase their ability to communicate with adults in workplace environments.
- ◆ Participating employees share their pride in what they do, and enhance their ability to work with young people.

Pitfalls

- ◆ Make sure to coordinate with educators regarding program focus.
- ◆ Limit confusion by establishing a single point of contact at the business and school level.
- ◆ Do not forget to define and resolve liability, safety and confidentiality issues, as well as ground rules regarding dress and behavior. Ensure that necessary safety equipment is available.
- ◆ Remember that some manufacturing environments are not safe or appropriate for students under 18.
- ◆ Do not forget to develop checklists of responsibilities. Determine who is responsible for creating forms (interview, parent permission, evaluation, employee survey). Make sure all forms are reviewed by company and school staff.
- ◆ Have procedures in place for student flow if many students are scheduled on the same day. If students are scheduled individually, develop check-in procedures for them.
- ◆ Remind participating employees of scheduled visits.

Pay attention to information from evaluations. Student and employee evaluations should be reviewed carefully by educators and employer focal.

Costs

- ◆ Coordination time including project development.
- ◆ Transportation costs to attend off-site meetings (possible).
- ◆ Personnel time for preparation.
- ◆ Cost of safety equipment.
- ◆ Possible loss of productivity.
- ◆ Administration time for project evaluation and documentation.

Provide Student Mentoring Programs

Purpose

Mentors from manufacturing companies can provide supportive, one-to-one relationships as they help students see the connections between school and work. Mentors serve as models of the payoffs for school achievement, provide educational and career guidance, and act as coaches in their student's pursuit of academic and technical competence. For mentors, this is a chance to promote their profession and boost their own morale by demonstrating pride in what they do. Companies benefit from a pool of potential workers already acclimated to company culture, processes and expectations.

Process

- ◆ **Develop a plan for a mentoring program in conjunction with representatives from the local consortium. Plan should include:**
 1. Parameters such as length of program, commitment in hours per month, goals and desired outcomes for the company and for students, suggested activities, and company support.
 2. Necessary company approvals, including budget if needed.
 3. Sanctioned on-hours as well as off-hours activities. Ensure company agreement, and resolve liability issues. Company liability will be reduced for off-hours activities if careful screening, including criminal records checks, are performed on prospective mentors.
- ◆ Assign a program coordinator from the company or the school. As an alternative, assign point persons at both sites to handle coordination. Ensure that coordinators are well-informed of what the commitment entails.
- ◆ Develop standard processes or communication tools that will be used. A consistent communication process and regular status reports are advisable.
- ◆ Develop a survey or questionnaire that will assist with the matching of mentors to students. Forms are available for both mentors and students that may be adapted.
- ◆ Announce the program concept throughout the company. Actively recruit good mentor prospects.
- ◆ Meet with interested employees for a more detailed explanation of the program, stressing the commitment required. This is the time to discuss the qualifications you are seeking. Effective mentors can motivate others, and demonstrate patience, pride in their work, good communication skills, and an interest in young people.
- ◆ **At the school level:**
 1. Announce the program concept through participating schools. It may be easiest for coordination to work with one school.
 2. Educators and company representatives should meet with interested students for a more detailed explanation of the program, stressing the benefit of participation.
 3. Have interested students complete a questionnaire that will help with matching. Make sure to include parent permission form.
- ◆ **Match prospective mentors with interested students.**
 1. Matches may be based on mutual career interests, as well as gender, ethnic group, geographical proximity and other interests.
 2. Look for commonalities in matching that will help students and mentors feel comfortable with each other.
 3. Coordinate a meeting or social activity to introduce mentors and students. Mentors and students will need to discuss expectations and communication methods, and schedule their next contact.

(Provide Mentoring Program, cont.)

- ◆ **After matching:**
 1. Be supportive of mentors' plans for getting students involved with the company.
 2. Be ready to make re-matches if some fall through.
- ◆ **Provide ongoing support for mentors, including:**
 1. Encouragement to maintain regular contact with their students.
 2. Encouragement to remain with their students through postsecondary graduation.
 3. Help mentors provide advice on educational choices that relate to careers, and to encourage students to complete their school program. Create a mentor support group.
- ◆ As students graduate and are ready for employment, mentors may provide job search contacts or leads, preferably within the company.
- ◆ Mentor program graduating students should be encouraged to mentor themselves.
- ◆ Have mentors and students provide evaluation data at regularly scheduled points.
- ◆ Evaluate the program against the original plan and adjust as necessary.
- ◆ Senior Management should visibly support this program, ideally by becoming mentors themselves.
- ◆ Provide mentors with company recognition or awards.

Payoff

- ◆ Companies gain from the opportunity to pre-screen students as potential employees.
- ◆ Mentors provide direct input on the day to day aspects of their job, workplace expectations, and educational requirements.
- ◆ Mentors can help prevent student dropouts, build workplace maturity and foster the attainment of academic and technical competence.
- ◆ The entire community, including employers, schools and families, benefits from strengthened relationships between positive adult role models and young people.

Pitfalls

- ◆ The individualized nature of this program can lead to hidden costs if not carefully monitored.
- ◆ Uncommitted mentors do more harm than good.
- ◆ If senior management is not supportive, options for mentor/student interaction may be limited.
- ◆ All security and legal clearances must be obtained prior to students' arrival on company sites.
- ◆ Contact with parents can help reduce potential barriers to the program. Remember that students may still be minors. Be aware of complications that may arise, and develop appropriate company policies.
- ◆ Not all matches work. Be ready to respond with re-matching, if necessary.

Costs

- ◆ Coordination and meeting time, including project development and management.
- ◆ Transportation costs to off site meetings.
- ◆ Possible loss of productivity.
- ◆ Communication costs, - printing, faxes, postage, telephones.
- ◆ Administrative cost of managing the program, documentation, and evaluation.

Offer Student Internships

Purpose

Companies often develop student internship programs in response to anticipated hiring needs. Program development might begin in the Human Resources Department in line with workforce training, selection and recruitment strategies. Focusing on future workforce needs will provide the greatest return for the company, as well as for student interns. With a well-designed internship program, companies can avoid the higher costs of training entering employees. And interns who are equipped with the specific skills needed by the company are more likely to be hired. Internship models vary, but most programs rely on a sequence of study that reinforces applied academic skills and provides students with increasingly specialized work-based training.

Process

Before developing an internship proposal, the appropriate company department or committee should identify the skills needed by the future workforce. Be sure to include foundation skills such as: basic and communication skills, teamwork, problem solving, etc., as well as job specific skills. Needed skills will drive the curriculum design. Then:

- ◆ Develop a preliminary program proposal.
- ◆ Provide a rationale for the program as a cost effective way to address future training needs. Conduct a cost analysis of current training costs, if feasible.
- ◆ Develop a draft budget, based on your cost data. To do this, you must decide if student interns will be paid or unpaid. Program models vary, but typically summer student interns are paid a stipend. School year interns, particularly if they intern during school hours as part of their academic program, may be unpaid.
- ◆ Enlist the support of high level executives.
- ◆ Review proposal with corporate legal, compensation, human resources, and labor representatives.
- ◆ Present the proposal.

After the proposal is reviewed and approved, begin developing the program. This will need to be done in partnership with the Tech Prep consortium or identified Tech Prep program. Some considerations:

- ◆ Determine the target student population. Look at other models, including the Boeing model, and discuss how to target with your Tech Prep consortium. Internships for Tech Prep students might be most beneficial after students have taken some Tech Prep courses, i.e. during the last two years of high school. Decide if you would like to do additional targeting, such as female or minority students, students who do not plan to attend four-year college, students who have at least a 2.5 GPA, etc.
- ◆ Determine the program's time frame and duration. These are in part a function of your budget, the skills you want to teach, and the ages and skill levels of the students. Options include: summer six weeks/over one-three summers, Saturdays, during or after school/over one-three years, etc.

(Student Internships, cont.)

- ◆ Develop curriculum based on identified skill needs. Work with the Tech Prep program and review existing company training resources for appropriate modules. Identify desired competencies, including technical and academic skills, and a chart that demonstrates competency sequence over time.
- ◆ Determine through what formats identified skills will be built. These may include: onsite training, classes, student projects, rotations with various employee mentors, etc.
- ◆ If your internship model includes employee mentors, identify and recruit them. Determine the parameters of their commitment. Develop rotation schedules if students rotate between departments or mentors.
- ◆ Identify supporting resources required. These include: equipment and materials, instructional and supervisory personnel and equipment, coordination time and administrative processes. Since instructor time takes personnel away from work tasks, schedule instructors as soon as curriculum sequence is developed.
- ◆ Work with your consortium and school contacts to identify, recruit, pre-screen and select a pool of student applicants.
- ◆ Because internship is a major commitment of company and student time, and may involve pay, make sure to conduct a full interview of candidates. This also provides important practice for the students.
- ◆ After interns have been selected, hold an orientation to the program. Cover routine issues that you would with any new employee (rules, dress, regulatory requirements, parking, attendance, etc.). Answer questions regarding the project, and invite company advocates.
- ◆ During the internship program, provide regular forums for all participants to provide feedback and have problems resolved.
- ◆ After the first group of internships ends, evaluate the program, both internally and with students and educator partners. Make revisions based on evaluation. Celebrate the achievements of students.
- ◆ Develop a follow-up process to determine how many intern graduates are ultimately hired by the company, and the cost benefits reaped.

Payoff

- ◆ The company benefits from directly training potential employees with reduced costs. The result is a better prepared workforce.
- ◆ Students build applied academic and technical skills in real workplace contexts. Using company equipment and learning from company instructors, they come to understand what the workplace requires and the nature of manufacturing environments. The result is a more motivated workforce with realistic expectations regarding work.
- ◆ Internship programs strengthen Tech Prep partnerships. When combined with teacher internships, student internships help companies shape educational programs and workforce development.
- ◆ Company employees benefit from mentoring and teaching what they know.

Pitfalls

- ◆ A successful internship program is a major commitment of time and resources. It is better not to embark upon this activity without excellent support at all levels of the company. If interns are paid it is especially important to resolve all labor and liability issues.
- ◆ Excellent planning and coordination is crucial, as well as ongoing communication with educator staff.
- ◆ Make sure to develop good student screening and interview procedures. Each intern represents a substantial commitment of company resources.

(Student Internships, cont.)

- ◆ Don't forget to use follow-up information to help evaluate program success. It is important to know if interns are ultimately hired by the company.
- ◆ Make sure interns know that the internship is not a guarantee of future employment.

Costs

- ◆ Personnel planning and coordination time.
- ◆ Costs of curriculum development, equipment, other materials.
- ◆ Potential loss of employee mentor productivity.
- ◆ Time for coordination with school personnel, student meetings, etc.
- ◆ Wages for students, if paid.

Additional Issues Affecting Work-Based Learning

Liability Issues

Liability issues generally fall into two categories: students' transportation to and from the workplace, and injury occurring while the student is at the worksite. Planners should seek legal advice on specific state and local issues before implementing a work-based learning program, however guidelines include:

Insurance Coverage. Students in work-based learning programs must be insured at school and work. If the student is considered "employed," workers' compensation insurance must be procured. Insurance for activities during the school day does not require a special policy, because it is included in the regular liability arrangements for the school or district.

Liability at the workplace. If the student is paid, or unpaid but still considered a "worker" under state or federal laws, he or she is considered an "employee" of the firm and comes under the employer's workers' compensation coverage. Employers may need a special workers' compensation insurance rider to cover students who are engaged in substantive, non-paid work. In Washington, the Department of Labor and Industries has a job category entitled "volunteer." Liability protection for this category is about five cents per worker hour for a company. If the student is paid through an intermediary, generally the intermediary must provide workers' compensation insurance coverage. However, a student in an observer role at the workplace is, in effect, still an extension of the school and no additional coverage is necessary.

Liability while students are in transit. In general, liability for accidents and injuries during transit rests with the party responsible for transportation. If the school is transporting the students, then normal school bus coverage applies. If the student uses public transportation, schools can either extend their regular coverage or have students sign an agreement specifying the school as not liable. If the student drives, his or her auto insurance should apply.

Unemployment insurance. Unemployment insurance is generally not provided to students in work-based learning programs.

Child Labor Laws

As with liability issues, it is important to seek legal advice regarding the employment of minors before a company begins to develop a school-to-work program. In Washington, questions may be directed to: Greg Mowat, Labor and Industries, 206-750-5310 or Bill Crossman at 360-753-2060. Issues to consider:

Minimum age standards. Minors must be at least 14 years of age to be employed for limited periods of time each day and week, and only during certain times of day. Sixteen years is the basic minimum age for employment in any occupation not declared hazardous by the U.S. Secretary of Labor. The law defines 18 year olds as adult workers.

Time and hour restrictions. Some states limit the number of hours and times of day a student under 18 can work in a single day or the total hours in a week. Federal law limits these hours only for those under the age of 16.

Work permits and agreements. To qualify as a student learner and therefore be exempt from certain occupational and wage regulations, federal law requires that written agreements must provide for safety instruction, supervision and a schedule of organized work processes.

Wages and stipends. The Fair Labor Standards Act requires the payment of the federal minimum wage for paid activities. Federal exemptions and required sub-minimum wage levels do exist for trainees and student learners, though individual state laws may override them.

Safety and health. Occupational Safety and Health Act (OSHA) regulations do not apply to schools since they are public employers. However, at the workplace, whatever OSHA regulations apply are relevant. Program planners must define the necessary combination of safety instruction provided by the school and the employer.

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Glossary of Terms

Applied academics. Courses that teach mathematics, communications, science, and other subjects in the context of how these skills are used in the workplace.

Apprenticeship for youth/youth apprenticeship. A formal training program for youths 16 and older to learn skills related to a specific occupation. The term “youth apprenticeship” distinguishes it from registered apprenticeship programs in the United States which usually first enroll participants well past high school graduation age. Combines classroom instruction and on-the-job training and results in a credential transferable among employers. Youth apprenticeship programs vary by state in structure and organization. Some states allow entry to traditional apprenticeships after youth apprenticeships are completed.

Articulation agreement. “Systematic coordination of course and/or program content within and between educational institutions to facilitate the continuous and efficient progress of students from grade to grade, school to school, and from school to the working world” (*Thesaurus of ERIC Descriptors*). The term frequently refers to the relationship between high schools and community colleges.

Business, labor, and industry. Business, labor, and industry include both the public and private sectors.

Career education. A comprehensive, lifelong educational program focusing on individual career development.

Career exploration. The investigation of occupational areas through real or simulated work-learning experiences.

Carl D. Perkins Vocational and Applied Technology Education Act of 1990. Federal act addressing youth and adult vocational educational programs and also academic and occupational skills with the goal of making the United States more competitive in the world economy. It also provides for Tech Prep and sex equity programs.

Career Speaker. A company employee who shares information about his/her career through speaking to Tech Prep classes.

Certificate of Mastery. Washington has more recently passed legislation requiring a Certificate of Mastery for high school graduation. By age 16, students will usually obtain the Certificate of Mastery designating that the student has mastered “essential academic learning requirements.” Following award of the certificate, the student will have the opportunity to follow pathways integrating academic and technical education, including but not limited to Tech Prep, college prep, work-based learning, vocational-technical education, and so on.

Competency-based education. An “educational system that emphasizes the specification, learning and demonstration of those competencies (knowledge, skills, and behavior) that are of central importance to a given task, activity, or career” (*Thesaurus of ERIC Descriptors*). Competency-based education is designed to prepare youth to successfully transition to postsecondary employment and education.

Cooperative education (cooperative work experience). A school-supervised and structured, paid work experience arranged by a school and employer to lead to an occupational goal. The student receives academic credits. The arrangement often includes a training agreement and training plan. The work experience is directly related to the goals and objectives of the education program, coupling classroom learning with workplace experience. Schools and participating firms and organizations develop cooperative

training and evaluation plans to guide and measure the success of each student. These experiences are sometimes called cooperative education, or simply, “co-op.”

Employability skills. Work habits and social skills desirable to employers, such as responsibility, communication, self-esteem, helpfulness, cooperation, timeliness, organization, and flexibility (see also “work readiness”).

Exploratory experience. An exploratory experience is an opportunity for observation and participation in a variety of worksite activities to assist in defining career goals. An in-school exploratory experience is a school-based activity that simulates the workplace.

Employer focal. A point or lead person in a company who assumes initial responsibilities for proposing, designing, and/or gaining approval for a work-based learning program.

Integrated curriculum. A meaningful way of organizing curriculum content. Academic and occupational content are often included. Formats, structures, and foci vary depending on the particular approach to integration. In some schools, faculty from more than one content area collaborate for instruction—thanks to innovative class scheduling arrangements.

Internship, practicum, and clinical experience. A supervised work-based learning experience which links a student with an employer for a planned set of activities often designed to give the student a broad overview of a business or occupational field. Students are assigned to a specific project or an area of concentration. Students develop job skills in a career area through these activities, which may be on a short-term or long-term basis.

Job Training and Partnership Act (JTPA). A federally funded job training program for dislocated workers and the economically disadvantaged. State and local agencies decide what training will be offered, and local business executives, who are members of private industry councils, decide how funds will be spent.

Job shadowing. An opportunity for a student to follow a worker through a typical sequence of activities so the “shadower” learns some of the skills and tasks required in a particular occupation; often arranged for only a few hours.

MTAG. Manufacturing Technology Advisory Group, a Washington State sanctioned committee comprised of representatives from industry, labor, education, state government and community service organizations. MTAG is chartered to develop and promote a Manufacturing Technology Education Program, a Tech Prep program designed for the manufacturing industry.

Mentor. “Trusted and experienced supervisors or advisors who have personal and direct interest in the development and/or education of younger or less experienced individuals” (*Thesaurus of ERIC Descriptors*). Job sites may have a mentoring program for new employees where an experienced worker is assigned to assist newcomers in their learning about and adaptation to the worksite. Many school districts are now working with community members to serve as mentors.

Nonrestricted partnership (business to local schools). A nonrestricted partnership includes the following components: is developed and maintained by a broker; has multiple partners with business; has a menu of pre-identified and available activities; has multiple participants; is sustained over an indefinite time; and requires corporate commitment.

Nontraditional occupations. Occupations in which representation of men or women has traditionally been less than 25 percent. For example: nontraditional occupations for women include auto mechanics and engineering; nontraditional occupations for men include nursing and secretarial work.

Occupational clusters. A group of related occupations—for instance, health occupations such as nursing, lab technician, and doctor—for which students will take a specific program of study.

On-the-job training (OJT). OJT is usually a paid work experience in which a student is taught specific job skills by an employer. OJT is usually associated with employment and training programs such as JTPA, Vocational Rehabilitation, or JOBS. It is largely an unstructured form of workplace learning where an employer hires JTPA participants and agrees to train them on the job in return for reimbursement, normally amounting to 50 percent of the trainees' wages while in training.

Pilot work-based learning program. A pilot work-based learning program provides structured, sequenced classroom instruction that integrates school and work-based learning. On-the-job instruction is based on recognized skill standards, follows a systematic schedule of work activities, and is provided in an occupational area by a skilled mentor. Successful completion of the program results in a high school diploma or Certificate of Advanced Mastery (in Oregon) and a state certificate documenting occupational proficiency. It is a term used to identify pilot sites currently authorized under Oregon Senate Bill 81.

Portfolio. A portfolio is a purposeful collection of work that tells the story of effort, progress, or achievement. It is an assessment tool for students to demonstrate mastery of knowledge and skills in a specific area and a collection of best work showing important career, technical, and academic knowledge acquired by a student. Its purpose is to demonstrate to employers and college officers the level of mastery attained. It provides information useful both in making instructional decisions and in evaluating a student's knowledge and accomplishments.

Throughout the education community, portfolios are gaining momentum as powerful tools for assessment and instruction. More than a collection of documents, a portfolio is a purposeful selection of documents that demonstrates knowledge of important skills. It is cumulative, assembled and revised over time; focuses on what students can do, rather than on what they cannot do; assesses a wide range of tasks; requires students to take a more active, responsible role in their education; and results in a tangible product that can be useful to a student after graduation.

School-to-work transition. A restructuring effort which provides multiple learning options and seamless integrated pathways to increase all students' opportunities to pursue their career and educational interests.

SCANS. (Secretary's Commission on Achieving Necessary Skills). The SCANS Report for America 2000 presented nationally recognized foundation skills and competencies necessary for work-readiness. The foundations skills are basic skills —reading, writing, arithmetic, mathematics, speaking and listening; higher order thinking skills —thinking creatively, making decisions, solving problems, seeing things in the mind's eye, knowing how to learn, and reasoning; and personal qualities—individual responsibility, self-esteem, sociability, self-management, and integrity. The competencies are: allocating resources; interpersonal skills; using information; understanding social, organizational, and technological systems; and selecting and applying technologies.

Service learning. A strategy to combine community service with learning activities to allow students to learn and develop through active participation in thoughtfully organized service experiences that meet actual community needs and are coordinated in collaboration with a school and community. It is integrated into the students' academic curriculum or provides structured time for a student to think, talk, or write about what the student did and saw during the actual service activity. It provides students with opportunities to use newly acquired skills and knowledge in real-life situations in their own communities. It enhances what is taught in school by extending student learning beyond the classroom and into the community and helps foster the development of a sense of caring for others.

Subject Matter Expert (SME). A company employee who teaches classes, generally with technical content, to Tech Prep students.

Structured work experience. Structured work experience is a worksite educational activity that correlates classroom education and on-the-job performance, is an integral part of a student’s educational plan and is evaluated collaboratively by appropriate school and worksite personnel. These experiences should be of sufficient intensity and duration to accomplish specific educational goals. Structured work experience may be required for graduation or certification.

Tech Prep/Associate Degree (TPAD) Program. A program with a planned sequence of competency-based studies articulated between secondary and postsecondary institutions, leading to an associate degree, certificate, apprenticeship, or four year college degree. It provides technical preparation in at least one field and builds student competence in the application of mathematics, science, communications, and workplace skills.

Technology education. A curriculum for elementary, middle, and senior high schools which integrates learning about technology (e.g. transportation, materials, communication, manufacturing, power and energy, and biotechnology) with problem-solving projects which require students to work in teams. Many technology education classrooms and laboratories are well-equipped with computers, basic hand tools, simple robots, electronic devices, and other resources found in all communities today.

Total Quality Management. A systematic approach to standardizing and increasing the efficiency of internal systems and processes using specific statistical and management tools in continuous improvement and empowering all workers to consistently meet internal and external customer needs and expectations. Emphasis is on documenting effective processes, committing to meet customers needs and shared decisionmaking.

2+2 or 4+2. A planned, streamlined sequence of academic and vocational-technical courses which eliminates redundancies between high school and community college curricula; 2+2 is high school years 11 and 12 and community college years 13 and 14; 4+2 is high school years 9, 10, 11, and 12 and community college years 13 and 14.

Vocational education. “Formal preparation for semiskilled, skilled, technical or paraprofessional occupations, usually below the B.A. level” (*Thesaurus of ERIC Descriptors*). There are several variations on this term. For instance, while Idaho uses the term “vocational education,” Oregon uses “professional-technical education” and Washington uses “vocational-technical.”

Work-based learning. A competency-based educational experience that coordinates and integrates classroom instruction with structured worksite employment in which the student receives occupational training that advances student knowledge and skills in essential academic learning requirements. It includes deliberate strategies for linking student experiences at worksites with the content taught in schools and classrooms. Students are assisted by workplace mentors who help them learn how to apply academic skills to solve real problems. It provides all students with the basic knowledge, skills, and attitudes required to be effective workers in a variety of workplace settings.

Workforce 2000. A landmark federal study now almost two decades old. It concludes that because of demographic changes the future workforce will have larger numbers of minorities and women, and employers will face greater needs for training.

Workplace readiness. Nontechnical skills that employers indicate would be valuable for any worker to have—reliability, critical thinking and problem solving, understanding of bottom-line accountability, and the ability to be a team player and self-starter. They are often mentioned by employers as basic to occupational success.

