

FYI for your information

Congress Moves to Fill Technical Training Void

By Elizabeth Shey Gorovitz
Associate Editor

A growing concern exists among the education community and the private sector regarding personnel shortages in this country's technical talent pool. If these shortages in math and science areas continue to increase, our industrial innovation and productivity may weaken, diminishing an employer's ability to train technicians and impairing our ability to compete in the international marketplace.

A major problem rests with secondary schools—they do not encourage students to pursue basic skills courses that will enable them to become adequately trained engineers, systems analysts, programmers and technicians. Further, qualified technical teachers are leaving educational roles for better-paying jobs in industry.

In response to this critical problem, several members of Congress have introduced legislation to address the issue. Identical bills introduced by Sen. John Glenn of Ohio and Rep. Dave McCurdy of Oklahoma (S. 2738 and H.R. 6774), The Precollege Math and Science Education Act, encourage cooperative efforts between employers and public schools. The bills provide a tax credit to employers who hire certified, full-time precollege math and science teachers for the summer, as long as the teacher's employment experience involves the applied use of high technology.

This legislation also provides a tax credit to employers who grant time off to an employee to teach math and science in public elementary and secondary schools. The employee must receive 10 hours off per week, with five of those hours spent in actual classroom instruction.

The National Science and Technol-

ogy Improvement Act, introduced by Rep. Margaret Heckler of Massachusetts (H.R. 6930) and Sen. Harrison Schmitt of New Mexico (S. 2809), seeks to improve the qualifications of secondary science and math teachers and provides research grants to encourage college science, engineering and math faculty to stay on the job. The bill also authorizes federal agencies with large research and development budgets to support—in conjunction with the private sector—university research efforts through grants for equipment, facilities, fellowships and scholarships.

"The fundamental problem breaks down into two related components," said Heckler. "There is a growing

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science and math illiteracy among the general public, joined by a growing inability to educate our way out of the problem."

Scientific organizations and private industry now agree that the country must improve science and math education at the high school, college and university levels. "Science and math are the building blocks of prosperity," Heckler explained. "America's leadership in technology has been the primary vehicle of the enviable increases in our standard of living. Our continued prosperity, and national security, are dependent upon high rates of innovation and productivity, which are in turn dependent on how well we apply

scientific and technical know-how. If our human capital in science is in decline, so will the fruits of that human capital."

Another bill, The National High Technology Technician Training Act (H.R. 6950) focuses on the community college system as an important element in delivering science and technology manpower development programs. Introduced by Rep. Doug Walgren of Pennsylvania, it provides grants to accredited community colleges to train students in high technology skills, matching federal and private sector funds. Each selected community college will establish an associate degree training program in high technology fields.

"The community colleges are close and accessible to local workers and industry," said Walgren. "They have a tradition of flexibility, accommodating the needs and schedules of working people. They are also positioned ideally to provide a mutually supportive complement to the programs of universities and engineering schools."

The National Engineering and Science Manpower Act (H.R. 5254), introduced by Rep. Don Fuqua of Florida, complements Walgren's bill. It authorizes federal agencies and departments to establish programs for training technical and engineering personnel and to cooperate with state and local governments on such programs. This legislation establishes a five-year Engineering and Science Manpower Fund in the amount of \$50 million to develop manpower resources.

Similar legislation also includes The National Technical Engineering and Scientific Manpower and Education Act (S. 2421), introduced by Sen. Glenn, and a bill introduced by Rep. Ike Skelton of Missouri (H.R.

This department is coordinated by Elizabeth Shey Gorovitz, associate editor. Send all items of interest to her attention, Training and Development Journal, Suite 305, 600 Maryland Ave., S.W., Washington, DC 20024.

5742) that creates the National Commission on Science, Engineering and Technology Education. Both establish a council or commission to study the status of science and technology education and the impact of deficiencies on industry, academia and the military.

Finally, a pilot program for training teachers in new techniques and computer literacy is set forth in The National Teacher Retraining Demonstration Act (S. 2743), introduced by Sen. Paul Tsongas of Massachusetts. It establishes four demonstration centers financed by federal, state and private funds. The four- to six-week retraining sessions curriculum includes computer literacy, career counseling and the role of education in industrial policy. Grants will be available to business groups and private associations.

Current legislation regarding technical training is necessary, timely and appropriate. As Sen. Schmitt said: "Necessary, in that our national security and welfare are increasingly dependent on our ability to realize and commercialize innovations successfully in an evermore competitive world. Timely, in that there is a widening recognition by government, business and the public of the necessity to improve our national scientific and technological enterprise. Appropriate, in that this legislation does not preempt or foreclose responsibilities which properly belong with state and local governments, educational authorities or the private sector."

Congress, the media and professional and educational associations have finally begun to focus on the personnel and expertise shortages in the scientific and high technology arena. Although job opportunities abound, qualified people to fill them do not. The missing link—the *crucial* link—is training.

Audio Cassettes for Training Flexibility

What fits in the palm of your hand, never wears out and can help teach anyone almost anything? The answer is the audio cassette. According to Dan Kennedy, chair of the board for General Cassette Corporation, a Phoenix-based audio manufacturer, many companies are turning to cassette learning programs to sup-

plement or replace current methods of training.

One reason cassettes are being used in corporate training programs is their flexibility. According to Kennedy, "The bulk of audio cassette training in this country has been purchased for salespeople. The audio cassette, however, is a highly effective training form for any job function or for any purpose." He added that this method is as good, if not better, for teaching technical information as for sales training.

Audio cassettes may be used to teach industrial safety procedures to employees. These programs may be replayed to employees at specific intervals for periodic review and reinforcement. "Industrial accidents happen either because people don't know any better or because they get careless and lazy," said Kennedy. "The audio cassette is an effective means of combating both these problems."

Audio cassettes can be used in management training as well as sales and technical training. With the emphasis on the bottom line and tight budgets, some companies find it is more cost- and time-effective to train management with cassettes than by spending money to send the staff to a training seminar.

Alcoholism: Address the Problem Early

New Jersey companies have discovered that helping alcoholics overcome their problem is not only good employee relations, but sound business sense.

"Companies pay a dear price as a result of employees who drink excessively," says Paula Bills, manager of Overlook Hospital's Priority Systems for Employee Assistance. "Studies show that the typical alcohol abuser is responsible for almost \$1,500 more a year in medical care than the nonabuser. This not only means higher insurance premiums for the employer, but countless more dollars wasted because of absenteeism, mistakes in job execution and lowered productivity."

Bills also points out that if an employer decides to dismiss a worker with a drinking problem, it can cost

up to a third of the worker's salary just to train the replacement. And some key employees are not easily replaced.

For reasons like these, more and more companies are making genuine efforts to detect alcohol abusers as early as possible and help them get the proper treatment, instead of sweeping the problem under the rug or firing them. The chief vehicle for this movement has been employee assistance programs which help troubled employees receive professional and confidential help.

While some of these programs are run by companies, others like Priority Systems, New Jersey's largest employee assistance program, are operated by outside organizations and contracted by corporations which make them available for all their employees.

Bills, who helped launch Kaiser Permanente's highly acclaimed alcohol treatment program in California in the 1970s, emphasizes that employers may be in a better position to help the alcoholic than other segments of society. "If family members say something to a problem drinker, chances are it is ignored," notes Bills. "Since most people want to keep their jobs, when an employer confronts them with their drinking problem, there is much greater impetus to do something about it."

Early intervention can make a tremendous difference. The mean number of years for detection of an alcoholism problem is 14, according to Dr. Arthur S. McLellan, vice president of community and environmental health for Overlook Hospital. That figure has fallen dramatically in recent years, he adds, noting it can be expected to drop still further as employers improve their ability to detect and help problem drinkers.

The warning signs include:

- Short, unexplained absences from work for vague reasons;
- A good work record characterized by an increasing number of mistakes and missed deadlines;
- Extended lunch hours;
- Irritability at work;
- Not being where one is supposed to be at a given time (also known as "on-the-job absenteeism").

Once a problem drinker has come forward Priority Systems will typically conduct a thorough and completely confidential assessment of that individual's problem make the appropriate referral when necessary to a professional treatment program carefully monitor that person's pro-

gress and conduct follow-ups. Sometimes the alcoholic will need a reliable in-patient program such as is provided by the Center for Addictive Illnesses in Morristown.

"Employers are now getting the message that alcoholics can recover, regain respect at work and become productive again," says Bills. "Both the individual and the company will benefit most when alcoholics are reached *early*. That's when employers and their employee assistance programs prove invaluable."

Good Communication: Written Memos

Many managers and supervisors neglect the most basic of communication skills—the written memo—according to Scott Chester, director of ship management for American Marine Industries. Says Chester in a recent *Supervisor's Bulletin*, published by the Bureau of Business Practice, "A lot of supervisors are turned off by written communications. They often don't do it well and, therefore, don't want to attempt it." Chester adds that good memo writing is a skill that can be developed.

Chester, who directs the activities of 26 office personnel and 170 crew members on 12 ships, uses memoranda routinely and breaks them down into three primary categories, each with a distinct purpose and style.

- *The general information memo.* This type of memo familiarizes employees with new policies and activities within the company.

- *Specific direction memo.* This style memo provides specific direction to various people.

- *Record of fact memo.* Supervisors or managers write these memos to themselves for the file. They document facts by recounting what happened.

Many supervisors and managers find memo writing difficult because they don't know what they want when they sit down to write a memo. The memos become too diffuse; nothing is specified and nothing is accomplished.

Good writing skills take practice, and rewrites and revisions are customary. Keep copies of every

memo, paying close attention to their effectiveness. Review, them to see which worked and which didn't. Read a memo carefully before sending it, checking for spelling and punctuation errors and making sure the memo says what it's supposed to say.

Says Chester, "The best memos stand out because of one characteristic: the quality of the language. It shows that the author has a complete grasp of the situation and has good control over what's happening in the organization. An otherwise good supervisor will not go far without good writing skills."

"World to Become Trainee," say Training Symposium Experts

"The whole world is about to become a trainee," concluded an AT&T Long Lines task force of experts in the fields of performance and training at a recent symposium entitled "Training in the '90s."

Held jointly by AT&T Long Lines, Piscataway, N.J., and Advanced Systems, Inc., Arlington Heights, Ill., panel members highlighted the following points as they projected the future of training in the 1990s:

- The computer will have a powerful effect on training as "Big Business" into the 1990s;

- Training should be based on comprehensive analysis, with profit as the important result;

- We should incorporate training into the computer system, yet be suspicious of software;

- Authoring languages are for old computer systems;

- We must find out how good our software will have to be;

- We have to analyze user needs more effectively;

- We should place a competent structural technologist on staff with an equal voice as to how courses should be constructed;

- We must look to vendors, because it is impractical to try to build everything ourselves.

The symposium provided data and recommended alternate views of the training environment in the 1990s. According to Task Force Leader John Piper, Data Systems design supervisor for AT&T Long Lines,

the symposium sought to identify new training technologies and techniques expected to be available in the 1992 time frame and to provide documentation outlining and describing the most likely alternatives for the training environment in 1992.

Hiring Firms Look for Specialized Talent

According to a recent survey of trends in employment conducted by The Goodrich & Sherwood Company, 77 percent of the companies polled said that when hiring from outside, they seek managers not only with general management skills and experience, but with specific experience in a competitive or similar industry.

According to Andrew Sherwood, senior partner of this human resource consulting firm, the economy forces companies to get as much productivity from an executive as possible. Management doesn't want someone from an unfamiliar industry when the same money can be spent to generate "instant" productivity not requiring an extended period of training.

A newly employed corporate manager with experience in a similar industry can:

- Zero in on problems more quickly and effectively;
- Better evaluate other managers to determine their strengths and weaknesses;
- Be more responsive to market changes;
- Cut costs by knowing where the waste and fat is;
- Better direct the company strategically in the areas of business planning and long-range development for new growth areas;
- Produce profit by effectively managing familiar specialized resources.

A less obvious advantage to top corporate management is the lowering of risk at a time when companies are becoming increasingly adverse to risk. Company officials also feel more comfortable justifying "industry-seasoned" and experienced senior level executives for key spots in the firm's success.