

# Technical Instructors

## What are the Qualifications and Sources?

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**B**efore the age of automation and the development of today's highly specialized industries, technical training within industry was desirable but was not an absolute necessity. Today, the survival of the entire organization often depends on an adequate training program. Therefore, a better understanding of the requirements of the one responsible for this training—the technical instructor—is in order.

Management needs to know what qualifications to look for when hiring technical instructors. Although there are many qualities to consider, there exists two qualifications a good technical instructor should have and which are often difficult to find in the same individual. These are

1. Adequate technical knowledge and skills;
2. Ability to conduct effective training.

Some believe that if the instructor knows his subject well enough, he will somehow get these ideas and abilities

instilled in his students. Perhaps a process of osmosis is expected to take place.

Others maintain that the industrial instructor must primarily be able to teach and to develop training outlines and lesson plans. They assign top priority to the proper training techniques and the ability to develop good classroom attitudes. These people seem to believe that it is a relatively simple matter for a good instructor to acquire advanced technical knowledge and skills.

### Teaching Ability

First, why isn't adequate technical knowledge and skills sufficient qualifications for a technical instructor? Many well educated and highly qualified engineers and scientists fail when confronted with a classroom situation. They simply are not prepared to communicate with their students.

Sometimes these instructors seem unable to understand the student's

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problems. Perhaps they know their technical material so well that they cannot present it in simple terms so that the average student can comprehend the instructions. These experts seem to find it difficult to remember how little they themselves once knew about the subject.

At other times these well-qualified authorities appear to be more interested in impressing others than in training them. Why? Any person, including an instructor, who is put into an unfamiliar situation must face the possibility of failure. An instructor who teaches without the proper training experience may fear that the students will not respect his authority—or more importantly—his knowledge. To prove that he does know his subject well enough to teach, he instinctively delivers his lecture so that all will know that he is technically capable; but few of the students may know what he is talking about. Very little classroom learning occurs and the company has lost a considerable sum of money in wasted salaries.

In today's industrial training, the subject material must be kept simple and related to industrial needs. Mathematics and other sciences should be taught only as required to make the student a more capable employee. The employer is not necessarily interested in "educating" the student.

### **Instructional Methods**

Many technical instructors fail because they do not know or practice the basic approaches to training. Other unexperienced training personnel do not make proper use of visual training aids. Therefore they lose the advantage of appealing to more than the student's sense of hearing.

Unfortunately, some instructors are influenced by the methods of teaching used in colleges and universities. Some of the concepts promoted, or at least

tolerated, in higher institutions of learning are completely unacceptable in industrial training situations.

In a college, the students are expected, and rightly so, to dig out on their own time what they cannot get in class. Training classes in industry are entirely different. Here, management sends the employees to company classes (usually on company time) for the purpose of learning how to do new jobs or to perform their old jobs more efficiently. These employees may or may not have the time or the inclination to study on their own time and it may be against union contract to require the employee to study after working hours.

It is therefore the instructor's responsibility to see that the student does learn what is required of him. This is sometimes very difficult. The teacher may have to be extraordinarily patient because many employees have never developed good study habits, or they may have lost these learning habits due to being away from formal education for many years. Nevertheless, the instructor must be able to accomplish the training objectives or his company will lose money and the students will still not have acquired the necessary knowledge or skills. This may be an unsurmountable task for a person without teaching skills.

### **Technical Knowledge**

However, what happens if the instructor has adequate training background and experience but is short on technical knowledge? We cannot belittle technical background requirements. Regardless of how well one can teach, he must have an adequate knowledge of his subject if he is to succeed in industrial training.

The instructor must have sufficient technical background in the general field in which he is teaching and he must be particularly knowledgeable in

the particular subject that he is teaching. An adequate technical background enables him to answer the student's related, and many times, unexpected questions. This makes it easier for the instructor to keep the respect and attention of the students. At times, he will find himself teaching superior technicians and engineers as well as others with limited technical background.

Another aspect of industrial training is that many of the courses taught in industry today are developed by the instructor. Textbooks or other training material are often non-existent. This requires training personnel to be able to communicate with the engineers and scientists in the technical jargon of their particular field. The instructor must have the ability and necessary techniques to secure the required information from these people.

#### **Educator or Engineer?**

Can the primary prerequisite for the technical instructor now be determined? Or must the technical instructor be both an engineer and an educator? There are certainly few technical instructors teaching in industry who would qualify on this basis. Again, it is management who must provide the answer.

Today, if an instructor is needed, the employer usually has a choice of an educator, an engineer or a technician. The educator will seldom fill the requirements because of the time it would take him to learn the required technical information. In many cases, the engineer is not satisfied with either the work or the pay. Will the position then go to the technician by default?

He may or may not be competent for the job.

Management and all those directly connected with training must become more aware of the requirements and possibilities of technical training. Some people doubt the wisdom and necessity of training. Others still question the need for formal training classes. Many times training personnel have encouraged this negative attitude towards training by their poor performance. Because of inadequate planning, poor instruction, or lack of technical skills, training results have not always been as good as they should have. The result was bad publicity for the training function.

#### **Sources and Standards**

College programs for developing technical instructors should be encouraged by industry and developed by colleges in cooperation with management. The field of technical instruction must be firmly established as an important cog in the wheels of industry. This can only be done by improving the standards of training and of training personnel. Management can do much to encourage and establish these higher standards. Those who are still in school should be encouraged to prepare themselves for a career in technical training as they now prepare for other careers within industry.

If these steps are taken, industrial training will begin to realize its full capabilities and to fulfill its true function. Individuals will choose a career willingly and proudly in technical training; technical instructors will no longer just happen.

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