Why Technical Professionals and Managers Need Special Training in Leading and Working with Others

The Learning Key® Approach

Many of the education and training programs offered by The Learning Key, Inc. are targeted to the needs of a very specific professional community: those who plan, supervise and carry out the research and development function or are involved in other technology-based jobs.

Why do our clients go to the extra effort or expense of a separate program designed specifically for this audience? The answer is productivity. Modern science and technology seldom advance on the shoulders of solitary individuals. It is a process that involves the coordinated efforts of many specialists, often from different fields, working together. This does not happen spontaneously in any part of an organization, and R&D professionals face particularly difficult obstacles.

Training targeted to R&D audiences can begin the foundation for developing leadership, management, and interpersonal skills and instill a commitment to practice them. In a technical environment, particularly, this is very difficult to do solely on the job because there are seldom excellent role models or feedback systems to provide reinforcement. Of the thousands of technically trained people in many organizations who have taken our management programs, fewer than 10 percent say they have had two or more excellent bosses and only about 30 percent say they have had one excellent boss.

Technical specialists are self-directed and often prefer to work independently. Their identities and motivation are tied closely to their work. Management and "people" skills are often looked upon as irrelevant and certainly far less important than technical skills. The education and training of technical specialists reinforce these views. Interpersonal communication and leadership skills are not a part of standard science or engineering graduate programs, thus organizations must teach these skills to technical workers.

No organization would hire an individual for a highly specialized type of work without prior background and training in at least a related field. Yet, organizations daily put technical specialists into roles for which they are totally unprepared. This can have profound negative impact on productivity and morale for all those with whom they associate.

Training customized for technical specialists is essential and there are several critical success factors in providing such training:

- *The credibility of the instructor(s)*
  Do they personally have the training and experience to align them with technical specialists? Have they demonstrated their own technical and managerial competence? Do they communicate that background effectively?

- *Relevance of the material*
  Are the examples and exercises clearly pertinent to the technical environment or must they be interpolated by the participants? It is not enough to articulate the needs and differences of technical specialists and then use generic situations in a training program.

- *Discussions and exercises targeted to the experience and needs of the participants*
  Individuals from laboratory, information science, and other technical environments face many specific challenges that their colleagues in other parts of the organization never see. The training delivered, as well as the trainer's delivery, need to focus on these specifics.

- *Application of general principles, models, or "rules of thumb"*
  General laws, whether in business or science, are of little practical value until applied in an environment that specifies the initial constraints

and assumptions. Rules for motivating, communicating, delegating, and innovating, as well as more general activities such as supervising or leading are no exception.

▸ For example, Maslow's hierarchy of human needs is often referred to in supervisory courses dealing with motivation. Maslow assumed that individuals constantly strive toward the goals they need which he placed in five categories: self, ego/esteem, social, security, and physiological. From the perspective of a business unit, a scientist's concern for explicit credit for a discovery or problem solved is usually interpreted (often derogatorily) as ego. However, in a scientist's "local" environment, discovery and problem solving are relatively intangible. Without explicit recognition s/he is organizationally "invisible" and at risk, leading to frustration and insecurity that can lower interest in work and diminish productivity. What appears to be an "ego" need is actually more one of security.

▸ A somewhat different example is training in innovation, creativity, and problem solving. Of the hundreds of general techniques in the literature, there are few that have been developed in the context of science and technology. Examples and exercises do not usually reflect the R&D and technology environment. However, relevant techniques and examples do exist. They focus on concepts such as convergence, simplification, confirmation, disconfirmation, search principles and subgoal management with examples from science history. Innovation training in R&D is more effective if it includes these task and activity related approaches.

▸ Project management is something that technical specialists tend to agree would be useful. Yet after taking traditional project management courses, many from R&D find the program was a waste of time. Why? It is because project management as it is

most commonly taught and applied doesn't work well in environments with a lot of uncertainty. Prescriptive planning techniques and processes can actually do more harm than good. What is needed instead is a better understanding and use of adaptive planning, a topic generally not covered in project management.

There are real differences between most organizational problems and those in science and technology. Day-to-day organizational or personal problems inevitably involve many human and other variables most of which are unquantifiable and uncontrollable. Consequently there are many good ideas with no really definitive ways to make a selection. Often several good ideas will be put into practice together. Everyone recognizes that commitment and hard work are essential in making the approach a success. Furthermore, success is often judged by looser standards than it is in most parts of the R&D cycle. Often, simply making a decision to "do something" is the critical step.

Science proceeds differently. Untestable ideas are unacceptable, and success or failure does not depend primarily on effort but on careful design, the laws of nature, and commercial constraints. Dedication to long-range goals is essential but the process is incremental and progress depends strongly on the ability to "speed up evolution." The creative element, especially in the early stages, is focused on finding the most efficient ways to identify and replace unproductive approaches. This difference is fundamental and requires new kinds of creative thinking.

There are many specific areas where technical staff can profit from targeted training. Examples include communication, team building, planning, project management, evaluation, supervision, and leadership.

For additional information, contact The Learning Key® at 215-493-9641 or visit www.thelearningkey.com.