An Old Standby that Still Works

ideas that can put teeth into evaluation of supervisory training

James H. McCormick

At Abbott Laboratories we recently revived and conducted a course in Job Instruction Training for supervisors and found it highly effective in producing tangible dollar-valued results in work areas. There were, however, a couple of variations from what seems to be standard practice for most industrial trainers.

First, we were not satisfied with limiting the course to a discussion and practice of the four basic steps of job instruction (prepare the learner, present the task, try out the learner's performance and followup). While this basic approach is often the norm for industrial JIT programs, we felt that the supervisor needs to obtain skills in a variety of additional areas before he can become a truly effective job instructor. Accordingly, the basic course was expanded to include presentations in training needs analysis, job breakdowns, employee performance measurements, writing training objectives, training program planning and problem measurement.

Even though a supervisor may be a real whiz at actual job instructing, if he doesn't know how to accurately determine his training needs he won't know where job instruction is most required. If he can't measure the extent of the training problem, he'll not know how much time and effort should be expended in training. And if he's poor at setting terminal and follow-up objectives for his training, he may not be able to tell how much training is enough.

A 10-Week Program

The addition of these and other topics expanded the basic course into a 25 hour program which was to be presented over a 10-week period to production line supervisors from a wide variety of manufacturing departments.

We were still concerned, however, with the perpetual "trainer's dilemma"; would the supervisors be able to apply the classroom knowledge to the actual job situation? It is one thing to listen to, discuss and practice new skills in the classroom, but applying these skills on the job, where conditions are normally less than optimum, can be something quite different.

To overcome this difficulty, we developed on-the-job assignments which complemented the classroom discussions and exercises. The assignments were administered and checked by the classroom instructor but were to be completed on the shop floor by the course participants. As the assignments, in retrospect, proved to be the key to obtaining the very significant results which were later achieved, they are presented here in some detail:

Assignment one: describe at least three problems or difficulties which you must periodically deal with and which you believe could be improved through appropriate job training.

This assignment was given very early in the course at the time that the classroom discussions were focusing on industrial situations in which training could play an effective role. As with all the assignments, this was to be completed and turned in to the classroom instructor for his review and critique.

Assumptions Substantiated

The completed assignments substantiated our earlier assumptions of the requirement to include the topics of training needs analysis and problem measurement. Many of the returned assignments were unsatisfactory in respect to problem definition and clarity.

Some of the listed problems were obviously not ones to be solved through any form of job training and a few were no more

than "smoke screens;" they involved work which was already being done by someone else and were apparently listed as problems only in order to complete the assignment on time. Poorly done assignments such as these were returned to the individuals with an immediate request that the assignment be redone.

Assignment two: expand upon your problem statement by further describing its seriousness. Be sure to include all pertinent facts and figures in this restatement. Be specific!

This assignment was given after a discussion of problem measurement techniques and from it come many of the facts and figures against which the actual results can later be measured. Instead of writing, "My production line has too much downtime," the participants were encouraged to define the problems with statements such as, "My production line has averaged eight hours of downtime per week for the last three months." Somewhat surprisingly, the majority of the supervisors were able to tap the appropriate resource documents and complete this assignment with relative ease.

Difficulties Analyzed

Assignment three: analyze at least one of your listed difficulties by: (a) completing a job break-down sheet for the job(s) involved in the stated problem-areas; (b) describing what you believe to be the basic causes of the problems you have previously reported.

The purpose of this assignment was to have the participants carefully evaluate their difficulties. It's very easy to blame problems on poor training (some managers have been doing it for years), but it's something else to solve those same problems through more training. And, on completion of this assignment, many of the listed problems were found to require non-training solutions.

Assignment four: prepare a results objective for correcting the problem(s) you have previously defined as being correctable through the appropriate job training. Be specific, using all pertinent facts and figures and stating the amount of improvement expected as accurately as possible.

This assignment was given following in-depth discussion of employee performance evaluations and performance objectives. We were requiring the supervisors to determine, in advance of the training they were to do, how much of an improvement they wished to commit themselves to make. While a few preferred to be ultra-conservative in their goals, the majority set very realistic objectives.

Assignment five: prepare a Program Plan, including the problem statement, the probable causes of the difficulty, your objectives and a detailed description of the job training you plan to do. Obtain the approval of either your foreman or department manager for the general program.

Here, the supervisor is learning to plan his training in advance rather than rushing pell-mell into it at the last minute. Additionally, by communicating with his superior, more information, support and resources may be made available than would have otherwise been the case.

Plans Finalized

Assignment six: rewrite and finalize your Program Plan, making any required changes. Also, using your previously prepared job break-down(s) as a guide, prepare the first draft of an Instruction Sheet.

The instruction sheets had been discussed in the classroom and were to be prepared as actual teaching documents. Whereas the job break-down is useful in showing the steps and key points of the job, the instruction sheet is used to show **how to teach** those steps and key points.

Assignment seven: finalize your Instruction Sheet(s), making required changes as necessary, and prepare to do the actual job training.

This assignment completed the planning phase for the supervisors and provided a brief breather to reconsider their plans and determine if any essential points had been overlooked.

Assignment eight: during the upcoming work, do the actual job training you have been preparing. Come to class prepared to discuss your experiences.

Some of the participants completed this assignment easily. Others, who had defined broader,

more difficult problems, found that they could not finish in a one week period. The assignment was extended over a longer time for these people.

Results Reports

Assignment nine: prepare and submit to your instructor a detailed results report for the training you have done. Be specific in facts and figures. Be prepared to validate all data provided!

This was obviously a key assignment, the proof of the pudding. By comparing the results report with statements of the original problem, and the objectives which were set, it it possible to measure the tangible changes which have taken place. Those training projects where significant changes have taken place can be validated and the supervisors can be given sufficient follow-up coaching to assure that they maintain their results and perhaps obtain even further improvements through job training.

Improvement Shown

The overall results of expanding the basic course and using on-the-job assignments as a training technique have been we feel, quite significant. While not all of the 20 participants are as proficient at JIT skills as we would prefer, each showed an improvement in ability to plan and do job training.

Additionally, some members of the class developed and conducted on-the-job training programs which had nothing less than spectacular results. Here are some examples:

C.R., a female supervisor in a production area, retrained two operators in a recovery procedure which resulted in an increased recovery of reuseable materials. Prior to the training only 48 per cent of the materials were being recovered. After training the recovery rate consistently ran at 97 per cent. Because of the value of the recovered units, the annual savings will be slightly more than $18,000.

M.W., a female supervisor in an assembly area, identified and retrained six assemblers who had been performing at about 80 per cent of the standard rate. After training, performance improvements of from 10 to 18 per cent were noted. The improved performance has a dollar value of more than $7,000 annually.

Productivity Raised

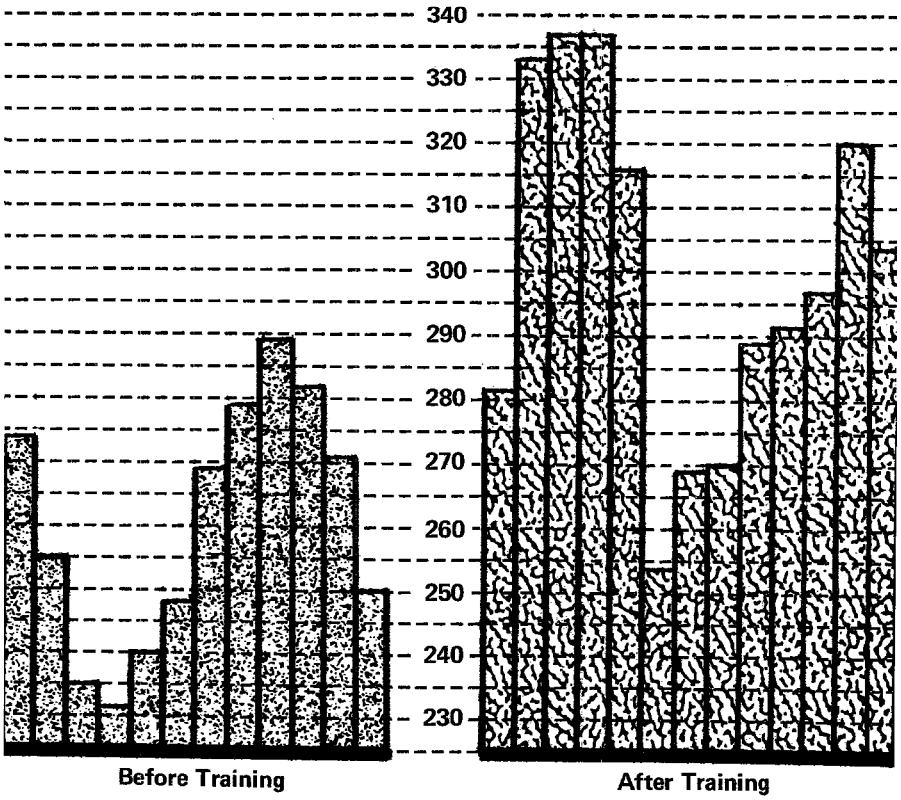
M.D., a female supervisor in charge of two inspection lines, retrained close to 30 employees over a one month period and succeeded in raising the average productivity of her subordinates by approximately 14 percent. Figure 1. shows the average units per labor hour for the three months before and after the retraining. Product scheduling is cyclical in this work area and accounts for the peaks and valleys in the average productivity. The increased productivity allowed for line rebalancing, improved job methods and a reduction of five people. The value of these improvements is in excess of $30,000 annually.

R.S., a male supervisor in a process area, instituted some procedure changes and retrained about a dozen operators in certain aspects of the process. The procedure changes will prevent the loss of certain bulk chemicals worth more than $40,000 annually. Additionally, the operator retraining has brought about a reduction in the process failure rate

Figure 1.

Productivity Improvement Through Training

Average units per labor hour



and is expected to yield a $30,000 annual savings.

M.W. and D.M., female supervisors in an assembly/preparation area, have achieved significant reductions in the product reject rate as shown in figures 2a. and 2b. These show only the results obtained for two of the product lines but similar (in one case better) results have been obtained for other product lines assembled in this department. Because of the high production volume of this department, the reduction in the reject rates has an annual value in excess of $200,000.

In all, of the 20 supervisors who participated in the class, only three were unable to show the tangible results of job training in their areas. Only the more spectacular training results were presented above.

Figure 2a.

Reject Reduction – Single Units

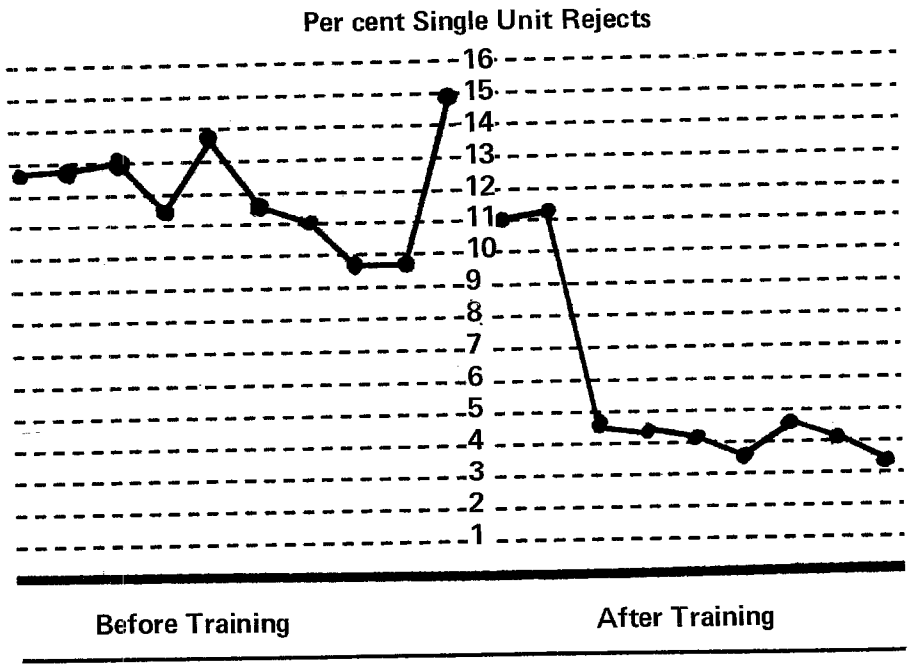
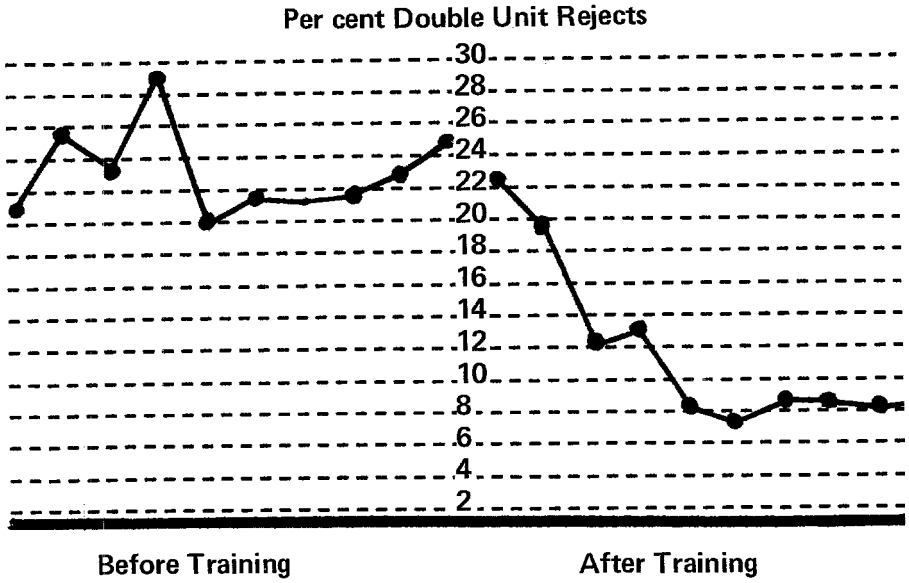


Figure 2b.

Reject Reduction – Double Units



Conclusions

We have concluded it was use of on-the-job assignments that really made the difference between this and other JIT training courses. The course itself, while expanded, was probably no better nor worse than similar courses elsewhere. Standard types of handout materials and visual aids were used to support the classroom discussions but the course itself was nothing more than an expanded version of the basic four-step method of on-the-job training.

Using assignments as a training technique, however, created some conditions which are often missing in industrial supervisory training:

1. Application of a good portion of the subject material was mandatory. No longer could the supervisor afford to be a mere "armchair philosopher" in the classroom. He had to practice what was being preached.

2. The supervisors were fully aware of their need to learn as they knew they would be expected to apply the new knowledge and skills. They therefore sought understanding rather than entertainment in the classroom.

3. Communications was improved on the job as well as in the classroom. Implementation of some of the training programs developed by the supervisors required the approval of their superiors. This interaction improves and enhances the understanding between the supervisor and his boss. Some of the supervisors found they were allowed to "do things" that they had previously

"assumed" that they could not do.

4. Increased motivation of the supervisor was evident in several cases. Having seen what results could be achieved through effective job training, and having received appropriate recognition for their contributions, some of the participants have all but made training a way of life.

5. A commitment to making improvements was evident in the majority of the supervisors. As they were the ones defining problems and developing solutions there was no difficulty in obtaining their commitment to make changes. The changes were theirs, not those of an "outsider" with no stake in their department.

Job Made Easier

Existence of these conditions obviously makes the instructor's job much easier. He can afford to be less concerned with whether or not his lesson is "interesting" or "stimulating" and spend more time getting down to the bread and butter issues of how the information can be applied.

And, perhaps most important, the course obtained tangible results which were readily documentable and easily convertible to dollar values. And while management may not always fully understand our training lingo, they'll always understand the meaning of hard, cold cash. Our Job Instructor Training Course has more than paid its own way and it's one that we'll never have to worry about "selling" to management. There are already more requests for participation than we have seats available for the next offering.

The Future

We are certain that the future will be even more challenging and rewarding than the past for we, as professional trainers, have also gone through a meaningful learning experience in the implementating of this program.

We have, to our own satisfaction, disproved the myth that a dollar value cannot be placed on training efforts. The dollar values that have been reported here have been validated and recognized as accurate by both engineering and management personnel. And the dollars resulted from the job training efforts of the supervisors as a function of their classroom assignments.

We have successfully reversed the conventional methods used by industrial trainers. Instead of using the opinions of management and course participants to shape the content and techniques used in the course, we have used the content and techniques to shape the opinions of the course participants and their management. This is not to imply that manipulation was practiced. Rather, we see ourselves as professional trainers and feel that we, not course participants or members of management, are most knowledgeable of the required course content and training techniques.

Personnel, Objectives Integrated

We have successfully integrated both personnel and production objectives into a single training program. All too often industrial trainers are content to serve and meet only the personnel/humanities kinds of objectives (and get a reputation as a bunch of philosophical song and dance men for their efforts).With the JIT course, we are able to present the humanistic approach to job training while simultaneously assisting in the definition and solution of production training needs.

Finally, we have gained experience in implementing a training system that is self-evaluating and self-justifying. That is, we did not have to rely only on supervisory attitudes/evaluations/reactions (sometimes referred to as "love letters") to justify continuance of the course. The results obtained by the supervisors, as measured in dollars, were the evaluation and justification. We did have the students fill out the standard evaluation forms, but only as a check on our instruction techniques and supporting materials. It was not used as a judgmental instrument for either the course content or its applicability.

Our future will be challenging indeed. And, if some of the ideas presented here should be appropriate for your training efforts, perhaps your future will also be more challenging.

James H. McCormick is a training specialist with Abbott Laboratories, North Chicago, Ill. His work experience includes classroom instruction; test, curriculum and program development, coordination and presentation; supervision; programmed instruction writing; training aid preparation; graphic arts and visual aid production and scripting. His special interests include developing and conducting supervisory training programs which have a tangible impact and dollar savings effects in the actual work area. He has also developed and presented courses to industrial associations and is teaching in the Division of Management Science, University of Wisconsin, Kenosha Campus. B.A., physics, Lake Forest College, Lake Forest, Ill. He is an ASTD member and editor of the Illinois Training Directors' Assn. newsletter, the *Informer.*