MAKING TRAINING
Think Production when Implementing
Training Initiatives

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**Background**

Over the past ten years, we have worked with more than three hundred organizations. These organizations, like most businesses, have had significant training needs. The common thread linking these organizations has been the need for providing skill training in an efficient manner at the least possible cost. One basic problem, which has been documented in countless journals and papers, is that training often takes the back seat when budget concerns arise. To help these companies meet their training needs and justify their cost and time, we have begun to approach training as a production process – a process that every plant manager can understand. We call this approach Making Training.

Organizations that produce a product require that many conditions be met to supply customers with their goods. People, machinery, and raw materials are systematically integrated to develop their products. The following list briefly describes the most common conditions:

- Proper product mixes are determined to meet customer demand;
- Machinery is set up to turn raw materials into finished products;
- The proper data and materials are inputted into the system; and
- Quality controls are established to ensure that the customer is satisfied.

Organizations spend countless hours making certain that their system produces what it is supposed to produce. Machines, tools, supplies, and inventory are treated like gold. If a line goes down, maintenance teams are thrown into action. If raw material runs out, procurement rushes to make up the deficit. If a quality defect is found, teams of people are assembled to analyze and solve problems. With training, employees must be treated with the same sense of urgency as are non-human elements. If this is done properly, the emergencies we face on a daily basis will be minimized because we have the skills to overcome them. So how should we do this? Exactly the same way as goods are made. We ‘make training’ by:

- Developing a proper employee skill mix to handle the daily operations of the business;
- Providing our employees with the proper ‘set-up’ or orientation to give them the base knowledge to perform like we want them to;
- Providing employees with structured data, materials, and instruction; and
- Establishing quality controls to ensure that knowledge and skills are maintained as agility demands.
Develop a Solid Employee Skill Mix

Every organization is composed of a diverse group of employees. Age, experience, and ability to affect the day-to-day operations vary. Identifying the mix of employees necessary to meet the needs of the organization is one of the most important goals of Making Training.

There are four basic levels that employees reach over their learning experience. These are:

- **Basic**: The ability of an employee to understand the basic facts and rules of a process and perform daily operations with minimal guidance.
- **Control**: The ability of an employee to control the process environment and perform process functions within acceptable safety, quality, and productivity standards.
- **Influence**: The ability of an employee to apply knowledge to successfully influence the outcome of a process.
- **System**: The ability of an employee to understand the intrinsic nature of a system and provide guidance in process changes for the better.

Figure 1 illustrates that as the workforce is required to contribute more to the organization, a larger percentage of them must be trained to reach the System level. This requires the ability to move employees from basic learning to an applied transfer of knowledge.
The determining factor of the mix between basic, controlling, influencing, and system-improving employees is the goal set of the organization. As goals become increasingly reliant on employee input and expertise, there will be an increased pressure to develop a larger percent of the workforce towards the system level. Based on this goal set, organizations examine their production needs and match the skills required in terms of the four descriptive levels. Next they evaluate where their skill deficiencies (or overages) exist and customize their training needs accordingly. For example, if a company is deficient in the system level employee skill base, more training will be required for key people to acquire theoretical knowledge to completely understand processes and system performance. Conversely, if a company finds itself deficient in the basic skill category, more attention must be paid to structured on-the-job training for key people to acquire task skills. The idea is to train what needs to be trained for the development of a proper skill mix within the organization.

Provide the Proper Employee Set-up

Many organizations have what they consider to be a solid orientation program. Typically, a new employee enters the workforce, sits in a room with an HR person, fills out necessary paperwork, and watches a video on safety and/or company history. Once this introductory exercise is over, the employee reports to a supervisor and receives a limited tour of their area. At this point, the ‘green’ employee is considered ready to tackle the specifics of their job.

We rarely treat the orientation process as a backbone of successful employment. But that’s what it amounts to. If we fail to spend a proportional amount of time in the orientation process, our retraining efforts will grow exponentially. This implies increased costs and time lost in production due to employees trying to learn the basics of their surroundings rather than concentrating on job performance.

A general rule of thumb is to design the orientation period equal to one-half the time delegated for learning the basics of the job. For example, if it takes an employee about 6 days to learn how to basically operate the machinery they are assigned to, the HR personnel, supervisor, and fellow employees should spend about 3 days orienting the new employee to the following issues:

- Safety – develop a clear understanding of the safety hazards in their area and their surroundings;
- Quality – develop a clear picture of the quality goals of the organization and the customer/supplier relationship(s);
- Production – develop a clear picture of the processes required to produce the desired outcome;
- Cost – develop an understanding of the costs involved in producing a product and the importance of attentive attitudes; and
• Surroundings – develop an understanding of the facility layout, noting special areas of concern and areas where they will be frequenting most.

The ‘one-half rule’ is applied to the time required of an employee to understand the basics of the job and become ‘self-operating’ (i.e., not having a trainer constantly look over their shoulder). The ‘one-half rule’ is a guideline only. If it takes ten weeks for an operator to learn a job, we certainly do not suggest an orientation period of five weeks! Be prudent in your delegation of time for orientation, but provide an amount of time significant enough to successfully orient the new employee to safety, quality, productivity, cost, and surroundings. Also, don’t always assume that a transferring employee from another area automatically knows everything there is to know about their new surroundings.

**Provide Structured Training and Mentoring**

Garbage In = Garbage Out. This statement, taken from the computer industry, certainly applies to training. If a new trainee is instructed by two different operators on the same job, and the two operators perform their duties differently, how will the trainee feel? Confused? You bet. We must ensure that skill training is structured, consistent, and delivered by trainers who possess the skills necessary to transfer knowledge quickly and effectively.

**Structured On-the-Job Training**

The basis behind this training provision is the development of operator-agreed-upon standards for process tasks. Here, tasks are documented based on what the people on the production floor actually do. A tragic mistake is to train people from Job Safety Analyses, Standard Operating Procedures or ‘official’ Job Descriptions. These documents are typically developed as a means for meeting OSHA requirements, quality certifications, or union contracts. For this reason they are purposefully vague. Why? So that time for administrative changes can be reduced. This vagueness is precisely why these documents are undesirable for training new employees.

What we have done with hundreds of companies is to help develop very detailed task descriptions with memory anchors and pictures to aid the learning process. The key point to be made is that these task descriptions are not only a tool for the learner, but also a tool for the trainer. Most jobs cannot be learned solely from reading a manual. It takes hands-on experience, as well as detailed instruction. The detailed instruction ensures that the consistency and accuracy of training delivery is maintained over the long term.

Consistency and accuracy in job skill training is a must. Without it, companies spend thousands of dollars per employee in re-training efforts and lost production. Consider figure 2 below.
The green line in figure 2 indicates a theoretical learning curve, where knowledge and skill are slowly introduced. At some point in time, an exponential growth occurs due to the development of a base knowledge. The blue line illustrates how skill learning takes place in the real world. The trainee receives some basic information and tells the trainer, “I got it.” The trainer then leaves to perform his/her own duties. The trainee struggles and performance drops. The trainee doesn’t really understand the duties and feels awkward about asking for assistance. In addition, the trainer fails to get confirmation of the trainee’s skills. The trainer re-trains the new employee and the cycle continues. The goal of structured training is to ‘smooth out’ the blue curve so that a trainee can attain a higher knowledge and skill level without increasing the amount of time spent in training.

One of the keys to ‘smoothing out’ the blue curve in figure 2 is to provide a consistent and accurate message over the life of the training period. This is accomplished through structured documentation of the skills and tasks required. The second key is the delivery of the message by an expert. This is called Mentoring.

**Mentoring**

The reason that Making Training works is because qualified mentors are used to deliver it. Mentors are more than mere trainers. They guide the learning process and develop a working relationship with the trainee. Mentors not only provide the information, they also identify where skill gaps exist and take actions to overcome them. Three basic
skills (along with a lot of practice) are required to build successful mentors. These are Objectivity, Active Listening, and Understanding How People Learn.

- **Objectivity** – having this skill is important because we want personal biases and non-specific behaviors eliminated from the learning loop. Being objective does not mean acting like a robot. Everyone has personal views about their surroundings. We actually encourage the mentors we train to have a style of their own. The key is to be more objective than subjective when training. Clarity with facts and detail will help to ‘smooth out’ the learning curve and reduce the need for re-training.

- **Active Listening** – typical training events have the trainer speaking about 80% of the time and listening for the other 20%. In production terms, we call this ‘push-style training.’ What we want to try and do is to ‘pull’ information from the employee. This concept is similar to the change in production systems from a batch-style to the styles presented by Just in Time, Lean Manufacturing, and other current production trends. Successful mentors deliver a minimal amount of information and then guide the employee through the hands-on learning process. They watch and listen for the trainees to indicate when they do not understand the details explained and use questioning techniques to eliminate inconsistencies and confusion. The mentor’s information flow reverses to 20% information delivery and 80% listening and guiding.

- **Understand How People Learn** – people learn in many different ways. Some people are better learners when visuals are used, some like a great deal of detail, and some like trial and error. Understanding the audience when training on the job and adjusting the training event (as much as possible) to meet their needs, will greatly enhance the training effort.

The three basic mentoring skills help to bridge the knowledge, skill, and experience gap between the mentor and trainee. As shown in figure 3, experienced employees (mentors) who deliver on-the-job training occupy a different place on the learning curve than the trainee. Objectivity, active listening, and knowing how people learn each help to bridge the knowledge gap. Again, bridging this gap ‘smoothes out’ the learning curve shown in figure 2.
Develop Quality Control for the Training Effort

Quality control in a production setting implies two basic actions: 1. Prevent defects from occurring, and 2. Rectify defects that were not prevented. We prevent defects from occurring (to the extent possible) by employing the detailed orientation and structured on-the-job training. But how do we know when ‘defects’ occur, and what do we do when one (or more) is found? We do this in training by means of a check during and after the training effort. We refer to this check as a diagnostic.

A diagnostic has a ‘systems’ ring to it. We could have used the word ‘test’, but it does not describe the true intentions of the tool. A diagnostic is a checklist of sorts that a mentor uses to indicate if a trainee has acquired the knowledge and skills necessary to perform the tasks. It is not a general tool. Questions like, “Employee could do the job”, are not included. Specifically, each step in the detailed task description is translated into past-tense verbiage and checked off as a trainee successfully completes it. These are demonstrated skills, not written or verbal responses. For those skills that are not successfully performed, an additional, specific training plan is created to re-visit them.

Summary

Over the past ten years, we have seen tremendous results when companies utilize this style of training. The research we have compiled provides the following results:

- Up to a 30% reduction in employee turnover;
- Up to a 50% increase in production (especially for labor-intensive jobs);
• Reduced grievances in unionized facilities (some going to zero);
• Increased employee participation for problem solving due to the perceived increase in time spent with an employee;
• Reduced defect rates (up to 40% improvement); and
• Reduced safety incidents.

Organizations are in the business of making money. In basic terms, this means making a quality product quickly and with the least possible cost. The one item in a company’s inventory that can contribute to all three of these issues simultaneously is its people. Treating people with the same (if not more) vigor and respect as is done for buildings, machinery, and raw materials will eventually lead to a more productive, safe, and quality-driven organization. Training is often an ambiguous term. Employees have a difficult time relating training to the bottom line. By integrating production terminology into the training effort, we have helped provide an understanding of the need for training. We have accomplished this by converting training into a production process all its own. We make training.

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