
POSTSCRIPT

Vocational Training Instructors Manual for ASEAN Development Committee (here in after referred as “GAIN Development Committee”) introduced vocational training instructor duties mainly on vocational training course management of Japan form 2013 for three years. The VT is demanded to contribute to the ability development of the worker, and how we implement VT course effectively and efficiently must be considered. Therefore, the training institution and instructor are required to improve training courses by the PDCA cycle management.

By this time of GAIN, I would like to ask that the quality of the training course is a step forward.

Finally, in order to contribute to ability development of workers in your country, I state the skill level for instructor and do it with my postscript.

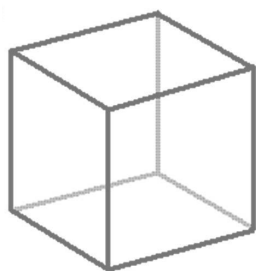
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Skill Level Underpinning Training Ability

First, VT instructors train their trainees to feel the enjoyment of manufacturing. Manufacturing is originally fun, amusing, and fascinating.

Therefore, the instructors are required that they themselves have already experienced the enjoyment of manufacturing. The human cannot teach what they do not know, of course. Instructors can never train or explain to trainees about the things beyond what they know about or experienced.

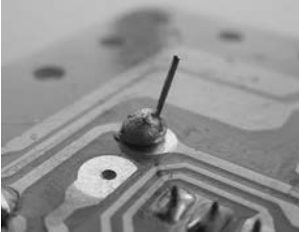
Additionally, we often hear that capable skilled workers at small and medium-sized enterprises (SME) are not good at training younger workers as successors. We can consider this to be the weak point of OJT implemented at SMEs which exposes the fact that the work standard sheets have not been created and the seniors have not learned the training methods. This should be one of the issues underlying human resource development at SMEs. At VT institutions, papers for acquiring various trade skills and techniques including textbooks for practice and work standards sheets are prepared, while training courses are implemented. The VT instructors, who learn training methods and psychology of trainees, prepare for workshops and necessary equipment prior to beginning their classes. Moreover, they start their classes only after elaborating ideas of lesson plan. They are professionals, so that these things are natural processes for them to take. It is also a royal road of training technique to lead the trainees toward training goals set while presenting easy challenges first followed by sophisticated challenges according to the acquisition process of trainees.



The below figure is an example of introduction stage for soldering training where trainees check the result of soldering by themselves. At the first time, trainees are trained basic soldering skill, and trainees create a cube by soldering 12 electrical wires together. Then a cube is left it in the store room for 3 months. After 3 months, the results are confirmed. While these 12 electrical wires appear to be completely soldered initially, but they often result in loosening in pieces after 3 months. Through this training method, the trainees can experience the shock that their soldering skills were inadequate and defective although the soldering appeared to be good at first. After this experience, full-fledged soldering instructions are started. Since the trainees have already had a bitter experience, they feel that the instructions given are really straightforward and they become serious about acquiring steady soldering skills so that they will not repeat previous mistakes. This process is just example and for long time training. It's not necessary to start with failure, there are so many ways to initialize lesson. How does instructor motivate trainee is the important factor. The method is depending on instructor's experience.

In manufacturing training, the instructors are required that they have acquired a high skill level and technique in addition to the acquisition of pedagogical techniques. There certainly exist the textbooks for soldering, while the classes are conducted according to what such textbooks explain, and at any rate trainees can come to the point of being able to solder certain objects. However, the results of their learning are clearly revealed after 3 months. As this case shows, true acquisition of skills is very difficult for them. Although the trainees appear to develop their skill by following what the textbook explain, defects can actually be found from place to place.

The same thing can be said of the instructors. Even though instructors attempt to implement training just after practicing the related skills a couple of times by following what the textbook explains, it is impossible to evaluate the acquisition level of each trainee. What is even worse, instructors cannot give the trainees any opportunities for them to realize anything. Instructors cannot point out the defects made by the trainees, and also cannot find out the reasons why trainees made such mistakes. This is because such mistakes could be caused due to reasons which vary depending on each individual trainee, such as physical capabilities or their attitude toward work.



Therefore, we have to consider that the instructors are able to implement training only after instructors themselves have acquired the related skills in order to reach a certain level of confidence. Instructors would have to realize how the skills can be acquired by repeatedly making similar mistakes through challenging. Skills and techniques can be acquired only by making serious efforts to acquire those skills, techniques, intuitions, and knack that are not described in working standards sheets or textbooks. The instructors can be capable of realizing the mistakes and finding out the reasons and causes why the trainees cannot complete certain skills, only after taking the above-mentioned acquisition process themselves. The instructors are capable of giving just the right tip while observing how the trainees do their work, only because they themselves have gone through this acquisition process.

Soldering skills require various abilities, such as how to heat electrical wires and joint materials, how to handle the soldering iron, the solder condition of the electrical wire tip, and the amount of solder. They also depend on the soldering conditions of different materials, their qualities, or the number of electrical wires to be connected (one or two), as shown on the left.

While the trainees are challenged by the assignments, they can have confidence by completing each assignment and



Soldering assignments: Provided by Mr. Kakisu,
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experience the enjoyment of soldering. VT offers opportunities for the trainees to realize the enjoyment of manufacturing and learn how to get close to the essence of manufacturing based on the process of acquiring skills through trial and error. It is impossible to stimulate the trainees' motivation and to realize the enjoyment and essence of work by merely completing textbook quickly. The example of 12 wires cube is also designed by such instructors' experience.

The VT instructors are required not only to have a high level of pedagogical ability, but also to have highly-qualified. Because, instructors' highly skills gives trainees challenge spirits and the fun of manufacturing.

Even those instructors with expertise other than the electronics field must be capable of understanding the meaning and significance of the soldering assignment photos shown above. They are required to develop insight

on how the assignment can be and are actually applied to their own areas of expertise. This group of assignments could be a letter of challenge for their trainees to understand the enjoyment of manufacturing and work.

When training has been completed, each trainee finds employment where a certain amount of work assignments are given to them to carry out within that company. They carry out their duties based on the enjoyment of challenging assignments and use what they have learned about manufacturing during their training. The main job of the instructors is to have the trainees understand the greatness of working in manufacturing. If the instructors do not realize the enjoyment of manufacturing, they can never train the trainees how wonderful manufacturing is. If the instructors do not aware of the wonderful impression of manufacturing, they can never tell the trainees about this impression. Above all, the instructors are required to acquire high-level skills and techniques thoroughly by themselves.