

Chapter 2 Management and Evaluation of VT

Without evaluation of whether an outcome of VT achieved its objective and target, efficiency of the method, etc., you cannot improve the VT at the next stage. It is important to rationally establish and manage evaluation items at the stage of implementation planning.

2.1 Perspective of VT Management

Adequate and continuing implementation of VT requires adequate management. For adequate management, it is important to run the PDCA cycle ensuring the consistency of POCE. This section explains PDCA and POCE.

2.1.1 PDCA: VT improvement cycle

The PDCA cycle is a method to incorporate improvement activities into the process of continuing implementation of not only VT but also various projects. It is believed that you can continue a project while improving it by turning the cycle of Plan, Do, Check and Act.

- (1) P (Plan) stands for planning a project; planning of items necessary to obtain good results in the project.
- (2) D (Do) stands for doing what you have planned.
- (3) C (Check) stands for checking the result of doing. Check whether good results are obtained; if not, identify where problems lie.
- (4) A (Act) is activity to improve problems. If any parts have a low rating, take action to improve them.

Plan, implement, evaluate and improve a project and then implement the project again. By doing this you can obtain better results. The idea is that the project will become increasingly better through the repetition of the cycle.

2.1.2 POCE

POCE is the idea that “you can obtain good results by operating a project while maintaining the consistency of the P (Purpose), O (Objective), C (Content) and E (Evaluation)”. You can conduct a project in a desirable direction only after turning the cycle of PDCA with consistent POCE. The following is an explanation of the meaning of POCE.

- (1) P (Purpose) is the purpose of conducting the project. Make clear for what is the project for, what challenges are going to be solved and who will take benefit.
- (2) O (Objectives) defines which condition is recognized to be successful in order to meet the purpose. What kind of state solving challenges or taking benefit.
- (3) C (Contents) determines the content of the activities toward the objectives and carry out the activities.
- (4) E (Evaluation) means evaluation of the project. Evaluate whether the result of carrying out the project serves its purpose, whether the objectives have been achieved and whether the results are rational and efficient.

2.1.3 Relationship between PDCA and POCE

The relationship between PDCA and POCE is shown in Table 2-1. Table 2-1 shows an approach to POCE in the operation of the training course. This is also an example to study on how to improve PDCA after the completion of the course.

As shown in Table 2-1, P (Plan) of PDCA roughly corresponds to P, O and C of POCE, while D (Do) of PDCA corresponds to C of POCE. C (Check) and A (Act) of PDCA serve as details of E of POCE. P (Plan) and D (Do) of PDCA are broken up into P (Purpose), O (Objectives) and C (Content) of POCE, which makes setting of evaluation items easier.

Then, how is training that was planned and implemented as shown in Table 2-1 evaluated? In other words, what improvements are to be made when the training is implemented again? As shown in Evaluation of POCE for Check of PDCA in Table 2-1, (1) graduates performed superbly, and (2) the course completion rate exceeded the target. So, is this a good training course with no need for improvement?

Table 2-1 PDCA with Inconsistent POCE

PDCA	POCE	
Plan	Purpose	Spread leading-edge skills in the local industry
	Objectives	(1) Enable the trainees to master leading-edge skills in one year (2) Achieve a course completion rate of XX%
	Contents	Develop a curriculum and training environment enabling repeated practice of skills used at workplace of companies using leading-edge skills. Assign excellent instructors with leading-edge skills.
Do	Implement training employing the plan and instructors mentioned above	
Check	Evaluation	(1) Graduates performed superbly. (2) The course completion rate exceeded the target.
Act		Objectives have been achieved. Is there need for improvement?

In fact, trainee completed the course performed superbly but failed to get into a local company. In Table 2-1, the Objectives of POCE are (1) Enable the trainees to master the leading-edge skills in one year, and (2) Achieve a course completion rate of XX%. In terms of the Objectives, the course appears to be excellent because trainees have mastered leading-edge skills and the completion rate is high. However, it has not accomplished the Purpose of the training course, “Spread leading-edge skills in the local industry”. Can we rate such a course as excellent? This kind of discrepancy is solved by ensuring consistency of POCE.

In the case of the training course in Table 2-1, P (Purpose) of POCE is not consistent with O (Objective). With P (Purpose) being dissemination of leading-edge skills to local industry, O (Objective) such as (3) XX% placement rate of graduates and (4) X% of graduates feel that they have spread leading-edge skills should be added to (1) and (2) as shown in Table 2-2.

Furthermore, you should make additions and changes to C (Contents) in accordance with the added O (Objective) so that it includes support for the trainees’ placement in local companies and coordination with local companies. In response to the increased O (Objective), add to E (Evaluation) (1) graduates’ acquisition level of the leading-edge skills, (2) completion rate of trainees, (3) placement rate by local companies needing leading-edge skills, and (4) the rate of graduates who think their company is now taking advantage of the leading-edge skills. Table 2-2 is an example of management considering the consistency of POCE.

Table 2-2 Revised POCE (PDCA cycle with consistent POCE)

PDCA	POCE	
Plan	Purpose	Spread leading-edge skills in the local industry
	Objectives	(1) Enable the trainees to master the leading-edge skills in one year (2) Achieve a course completion rate of XX% (3) Rate of graduates’ placement at local company: XX% (4) XX% of the companies feel that the graduates spread the leading-edge skills
	Contents	(1) Develop a curriculum and training environment enabling repeated practice of skills used at workplace of companies using leading-edge skills. Objectives (1)(2) (2) Assign excellent instructors with leading-edge skills. Objectives (1)(2) (3) Support for placement at local companies. Objectives (3)(4) (4) Coordination, consultation and information exchange with local companies. Objectives (3)(4) (5) Assign support personnel in charge of (3)(4). Objectives (3)(4)
Do	(1) Implement training employing the plan and instructors mentioned above. (2) Implement support for placement at local companies and coordination, consultation and information exchange with local companies as mentioned above.	

2.1 Perspective of VT Management

Check	Evaluation	(1) Graduates performed superbly. (2) The course completion rate exceeded the target. (3) The rate of graduates' placement at local company exceeded XX%. (4) XX% of the companies feel that the graduates spread the leading-edge skills.
Act		As the results met the purpose and objectives, The next session will be implemented in the same way.

What is distinct in Table 2-2 is that O (Objective) includes those concerning capability development of trainees (Attainment objective: Objectives (1)(2) in Table 2-2) and those corresponding to the purpose of the training course (Training objective: Objectives (3)(4) in the Table 2-2). It is necessary not only to have the trainees' skills reach the attainment objective, but also to achieve the training objective.

If planning and execution as described in Table 2-2 produced good results, it can be said that good training was implemented. On the other hand, if the result is that the graduates failed to get a job in a local company as in the case of the training course shown in Table 2-1, it will be necessary to consider activities to improve graduates' placement rate in the region. Specifically, determine the reason why the trainees did (could) not get a job in a local company. There may be various reasons such as: companies outside of the region employed the trainees because they had acquired leading-edge skills; the trainees' leading-edge skills are not those desired by companies; and there is no local company with a need for leading-edge skills. By conducting necessary surveys assuming such reasons (analysis and planning) and taking measures according to the reason (design and development), you can turn the cycle of PDCA with consistent POCE.

2.2 Management Perspective

Good VT should be consistent with POCE in considering management, therefore we need the management perspective of (1) making trainees reach objective (Attainment objective), then (2) achieving the objective of training corresponding to the purpose of VT (Training objective), and (3) ensuring rationality and efficiency of (1) and (2). Figure 2-1 shows the relationship of this with POCE.

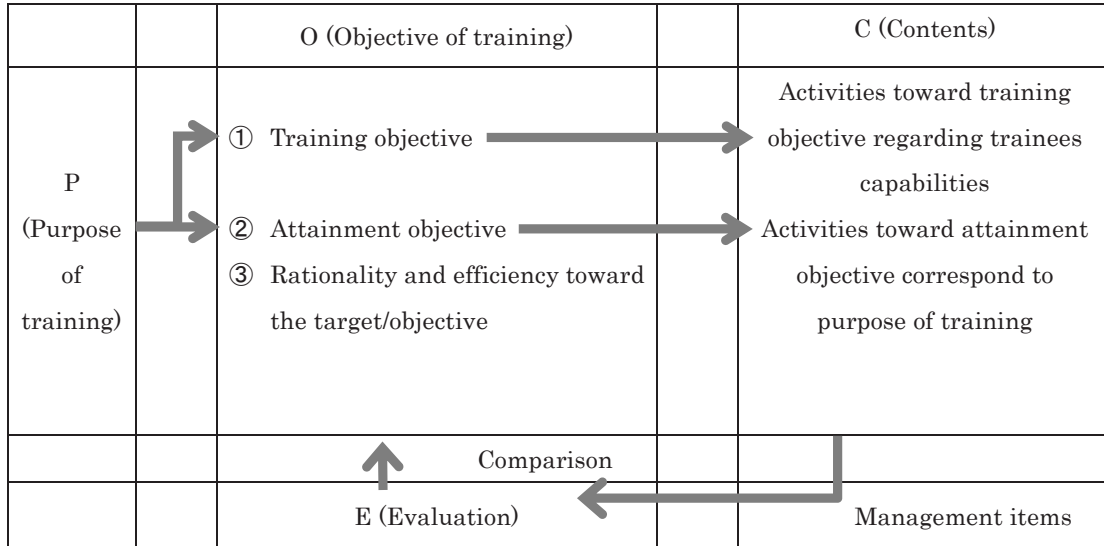


Figure 2-1 Management Perspective Based on POCE

The attainment objective (capabilities companies desire from new trainees) is set considering the skills necessary for graduates to accomplish the purpose of the training (ex. improve the employment rate of new trainees in the region).

Examine the content of the training method to ensure achievement of the attainment objective, create an environment for implementing the training, and implement activities to achieve the attainment objective (implementation of a training plan and training).

As a result, you can achieve the training objective (ex. employment rate of trainees at occupations related to the training) corresponding to the purpose of the training. In order to achieve the training objective, conduct “activities to achieve the training objective” (ex. placement support, recommendation of graduates to companies) in addition to training.

Among these activities, management of training is activities to collect management items representing the status of activities for achieving the training objective and attainment objective (status of job searching and skill acquisition) and to evaluate the rationality and efficiency of training objectives, attainment objective and activities to achieve them in order to improve these activities.

2.3 Management Objects (Examples of Management Items)

2.3.1 Examples of management items related to training objective

Management items of the training objective (O) corresponding to the purpose of the training (P) may include the examples in Table 2-3. Deciding the level of the items to reach at the end of the training constitutes target setting. Management concerning the training objective is activities to catch up the status of these management items and make modifications to achieve the training objective.

In order to design these management items, it is necessary to clearly define the purpose of the training. When setting a training objective, you must be able to clearly explain its relationship with the purpose of training.

Table 2-3 Training Purpose and Objective

Purpose of training (P)	Examples of management items concerning training objective (O)
Secure staff resources of local companies	<ul style="list-style-type: none"> • Rate of placement at local companies • Rate of placement in related occupation • Improvement in local companies' perception of human resource shortage • Local companies feel that they could obtain necessary human resources by employing graduates from VT course
Promotion of specific industrial fields in the region	<ul style="list-style-type: none"> • The extent to which the industry was promoted (increase in the number of companies and those of the target occupation) • The extent to which the graduates are employed at the target occupation/company of the industrial promotion
Lower the local unemployment rate	<ul style="list-style-type: none"> • The extent to which local unemployment rate was lowered
Reduce work accidents of new workers	<ul style="list-style-type: none"> • The extent to which the work related accident rate of placed graduates was reduced
Capability development of workers who lack skills necessary at workplace	<ul style="list-style-type: none"> • The extent to which the graduates could use the acquired capabilities at work (whether they have opportunity to use them; whether the capabilities acquired through the training match the needs at workplace)

2.3.2 Examples of management items related to attainment objective

Attainment objective (capabilities to be acquired by graduates) are expressed with the scope and level. Capabilities to be acquired vary depending on the purpose (P) of the training. For example, (1) a training course aiming to develop capabilities of precision machining, and (2) a training course intended to supply capabilities of basic machining are both designed the machining skills but their contents are significantly different. Therefore, the relationship between the purpose and the attainment objective must be clearly explained as is the case with training objective.

Capabilities expected from graduates according to the respective purposes are set as attainment objective, management items of which may include the examples in Table 2-4.

Table 2-4 Training Purpose and Attainment Objectives

Purpose of training (P)	Examples of management items concerning attainment objective (O)
Secure staff resources of local companies	Acquisition situation of capabilities that local companies require from new employees
Promote specific industrial fields in the region	Acquisition situation of capabilities that specific local industry requires from new employees
Lower the local unemployment rate	Acquisition situation of capabilities required by the industry that can employ more workers in the local labor market.
Reduce work accidents of new workers	Acquisition situation of capabilities to effectively use methods to prevent work accidents
Develop capability of workers who lack skills necessary at workplace	Acquisition situation of capabilities necessary for solving problems workplaces are facing

Capabilities of trainees may be assessed before, during and after the training. Evaluation before the training is made to check whether they have ability to participate in the training and divide the training course into classes by capability level, for example. Assessment during the training is conducted to provide the trainees with feedback on whether they have mastered the training content to that point. Assessment at the end of the training is conducted to check whether the attainment objectives are achieved.

The instructors evaluate the level of achievement of the attainment objectives and provide the trainees with feedback on the results. The training manager compiles the results, confirms whether any of the trainees have difficulty, provides support as needed and uses the results for training completion certification.

2.3.3 Management items concerning rationality and efficiency toward objective of training

There are many management items concerning rationality and efficiency to achieve objective of training. Rationality means the consistency of the objective of training and contents (scope and methods of efforts) with the purpose of the training. To ensure efficiency, check whether the efforts (scope and time, labor and cost used for each of them) to achieve the objective of training are implemented in a lean way.

Rationality and efficiency sometimes go together but sometimes not. In a training course with the attainment objective “capable of using a certain equipment”, when teaching how to use the equipment, it is rational to create an environment for all trainees to use the equipment to learn how to use it. It may seem to be also rational to prepare one piece of equipment for every trainee so that all trainees can practice at one time. However, given the cost of preparing the equipment for the number of trainees, it is not necessarily efficient. If you divide the class into two groups and teach one group in the morning and the other in the afternoon, the necessary number of equipment is reduced to one half. This way, you can improve efficiency while maintaining rationality. However, the instructor who can teach how to use the equipment may be busy and available for the class only in the morning. If the number of the equipment is only one half that of the trainees, only one half of the trainees will be able to practice in the morning while the other trainees will be just observing. This way, one half of the trainees would not become capable of using the equipment. If two trainees are to use one piece of equipment, their level of achievement would be lower than half of the level they would have achieved by using it alone. It may be efficient in terms of the cost of purchasing the equipment but rationality would be reduced.

This way, rationality and efficiency sometimes go together but sometimes not. Because priority is given to rationality which means achieving the attainment objective, it is necessary to examine how to increase efficiency while maintaining rationality. Table 2-5 gives examples of management items concerning rationality and efficiency and an outline of their respective control items.

Table 2-5 Example of Management Items Concerning Rationality and Efficiency Toward Objective of Training

(1) An environment that facilitates participation in the training Facility and equipment (room, whiteboard, projector, machines, tools) Training materials (car for practice, PPT materials) Materials (cables, gasoline)
(2) Usage of funds
(3) Response to various conditions of trainees Expectation/wish, factors disturbing learning, capability acquisition status, progress of career activities
(4) Response to risk Safety and health in and outside the training, complaints, misconduct by personnel/trainees, changes in expectations on VT, compliance with laws
(5) Consistency of POCE
(6) Training implementation organization Capability, necessary number and education of the staff Target sharing, division of roles, mutual help, motivation
(7) Improvement of VT concerned personnel’s capabilities to perform tasks

(1) Environment that facilitates participation in the training

Creating an environment that facilitates participation in the training is rational for the purpose of helping the trainees

achieve the attainment objective because it will raise the trainees’ motivation and enable them to repeat practices as many times as necessary using all machines, tools and materials they need. On the other hand, preparing excessive facilities and equipment involves useless expenses impairing efficiency. It is necessary to create an environment facilitating participation in the training while maintaining rationality and avoiding excessive investment.

Items to management to create an environment that facilitates participation in training are roughly divided into facilities/equipment, training materials and other materials. These items are managed from the perspective of preparing a sufficient quantity, ensuring good functioning, preventing theft, etc. If it is planned to let every trainee use one piece of equipment, it is necessary to check whether the quantity of the equipment corresponds to the number of the trainees, whether there are necessary tools to operate the equipment and enough raw materials for repeated practice if materials are to be processed.

Confirm whether the training is operable with the facility/equipment, training materials and other materials indicated in the training plan and the environment is actually prepared. Next, confirm whether they are in an available state. Furthermore, it is necessary to prevent their loss due to theft, etc. (See Table 2-6). The equipment is required to confirm their quantity and functions, procure for shortfalls if there are any, and prevent their loss during the training.

Table 2-6 Example of List of Workshop Equipment

Name of equipment	Date of confirmation (YY/MM/DD) Confirmed condition	Date of confirmation (YY/MM/DD) Confirmed condition
Coated arc welding machine	Good	
CO2 welding machine	Good	
TIG welding machine	Good	
Shearing machine	A part is missing about 30cm to the right of the edge Work avoiding the missing part.	
Beveling machine	Good	
Smoke discharging equipment	Lid of the ○○ plate duct is not good. Need to request repair	
Screen	Good	
Workbench	Good	

(2) Usage of funds

You will need funds to create an adequate training environment. Spending money for things necessary to enable trainees to achieve their attainment objective is important to increase rationality and efficiency.

If trainees bear the expense of the training, it is necessary to estimate the amount necessary for the training as the basis of calculation of the training expenses. It is also necessary to manage that the obtained funds will last during the training duration. Expense items to be managed may include the following:

① Personnel cost

Expenditure for instructors who implement the training. If an instructor is invited from outside, you can calculate the expense for the instructor per trainee by dividing the compensation to the instructor by the number of the trainees. In some cases, indirect personnel expenses such as those for office workers may be included.

② Raw materials cost

Expenditure for materials consumed through the training. Various materials may be consumed. Total all of them and calculate the cost per trainee. Repeated practice is necessary to advance skill level but consumes a large amount of materials and increases Raw materials purchase cost. It is important to design training assignments with high training effectiveness considering rationality and efficiency.

③ Tool cost

Expenditure for tools that are not consumed in a single year. Their annual depreciation can be obtained by dividing the cost of individual tools by their average usable years. In some cases, wear and tear expense of facilities/equipment may

be included.

④Utilities cost

Expenditure for lighting, running water and electricity at the place where the training is implemented. For the expenditure for running water and lighting that are used just because there are people, determine a fixed amount and multiply it. Costs of a large amount of water used for dyeing and a large amount of electricity used for welding are calculated separately.

Such calculations may be used as the basis for the cost to implement a training course (See Table 2-7), the basis for a budgetary request if the training is provided at the public expense, the basis for various training performance reports and the budget request of the next year. If you record the material costs as the training progresses (See Table 2-8), you can use the record to estimate consumption of raw materials according to the budget (See Table 2-9).

Table 2-7 Example of Course Fee Reckoning Table

Course Fee Reckoning Table				
Training course			Number of trainees	○
Training days/hours				
				Amount per trainee
Utilities	General unit cost	1,500/trainee/day	○○	
	Special cost of the course	2,000/trainee	○○	
Subtotal				○○
Compensation	Class C	7,000/hour	○hour	○
	Class B	10,000/hour	hour	
	Class A	15,000/hour	hour	
Subtotal				○○
Training material cost		○○		
Raw material cost		○○		
Subtotal				
Total: course cost per trainee				

**Table 2-8 Example of Management List of Training Materials
(table of tools and materials by assignment)**

Training course	Welding course
Training assignment	Medium steel plate downward coated arc welding without backing
Machines and tools to be used	
Welding machine	1 /trainee
Workbench	1 /trainee
Tongs	1/trainee
Protective equipment (mask, gloves, apron, gaiters)	One set/trainee
Raw materials to be used	
Steel plate: 3×6 t9	2 sheets 10 trainees/8 hours
Welding rod: D4301	5kg 10 trainees/8 hours

Table 2-9 Example of a Raw Materials Management (stock card by material)

Material		Steel plate		
Specification		3×6 t9		
Reception date	Received quantity	Date of use	Amount used	Stock
MM/DD	2			2 sheets
		MM/DD	1 sheet	1 sheet
		MM/DD	1 sheet	0 sheets
MM/DD	2			2 sheets
		MM/DD	1 sheet	1 sheet
		MM/DD	1 sheet	0 sheets

(3) Response to various conditions of trainees

Family problems and troubles among trainees that throw the trainees’ concentration off the training are factors to prevent them from achieving their Attainment objective. Solving such troubles before becoming a big problem will increase rationality and efficiency in achieving the training objective and attainment objective.

Specifically, this is a kind of management to support trainees to receive training toward a desirable future for them. There may be the following management items:

- Compatibility between the purpose of the training and that of the trainee (expectation, wish)
- Check for impediments to the trainees’ learning during the training. Examples are: falling behind others in the classroom, education cost, family conflicts, delinquency, bullying or interference among trainees or by others, harassment by people involved in training, health problems.
- Progress in receiving the training: whether the trainees are taking the relevant subjects; performance of the each subjects
- Progress of career activities. Confirm their desired career, whether they have undergone an exam/interview of the desired company, etc.

Catch up the items above through regular interview, observation, performance and other conditions of the trainees, record them in personal record book (See Table 2-10), find factors disturbing learning and signs of disturbed learning and provide assistance for their future. Instructor observe and record behaviors of their trainees during usual classes. If they have some concerns, they provide information to staff specialized in trainee guidance, employment guidance, for example, to reduce the problems.

Table 2-10 Example of Trainee Management Sheet

Trainee			
Basic information			
Name of the contact	Address	Phone number	Remarks
○○○○	○○○○	○○○○	
Emergency contact name	Address	Phone number	Remarks
○○○○	○○○○	○○○○	
Training situation		Family situation	Interview record

First term of YY	Completed all required subjects		
Second term of YY	Failed in oo practice and passed after taking supplementary lessons	His parents are in divorce litigation and currently separated. He is living with his mother. Any call from the father should not be relayed. MM/DD	MM/DD He needs to become independent early due to parental marital discord. He wishes to work at XX plant in an adjacent town.
Situation in the institution			
He is not good at communication and tends to be isolated. The instructor actively calls to him, asks him to come when other trainees are there and encourages him to talk.			

(4) Response to risk

Risks in VT institution are happenings that may occur in the VT course and could explode into a situation in which it is impossible to continue VT. Happenings that make continuation of VT impossible may stem from the trainees, the VT instructors, or the VT institution. Here, we outline risks relating to VT instructors and institutions. Risks relating to trainees will be described in “4.8 Response to Difficulties of Trainees”.

Risks relating to VT instructors and institutions may include the following. It is necessary not only to respond after the occurrence of these happenings but also to develop a plan beforehand of what to do when such happenings occurred and make the plan public while at the same time taking actions to prevent them.

- Risks relating to VT instructors

Ex. crime, disease, injury, family problem, trouble with trainees, harassment, troubles among instructors, discord among managers

- Risks relating to VT institutions

Injury of trainees, complaints from trainees/local community (noise, smoke, gas, bad manners of trainees/instructors), inadequacy/failure of the training environment (ex. building, facilities, weather, electricity, water and sewerage, IT infrastructure), complaint on evaluation of VT projects, legal/rule violation (noncompliance) by staff and other persons involved

If a trainee was injured during a training session, for example, how should we correspond to the situation? The first thing to do is to rescue the trainee. Whom should the instructor contact to do this? How to call an ambulance? Is there a telephone in the workshop? Is it better to use a personal cell phone? If there is no telephone in the workshop, is it necessary to have someone run to the office to make the phone call?

Without prior arrangement of these things, it would take time for an ambulance to arrive and the conditions of the injured person could turn worse. If bungled handling worsened the condition of the trainee, responsibility of the VT institution for the failure of safety management would be investigated. As a result, the institution might be forced to stop training or even close the school.

To prevent this from happening, it is necessary to decide ahead what to do when a trainee is injured. Of course, ensuring a safe instruction method is a prerequisite for operation of a VT institution. It is important that managers decide how to respond to these risks and disseminate the decision to all training executors (see Figure 2-2).

Risk management is conducted to prevent interruption of training which could reduce the efficiency of training.

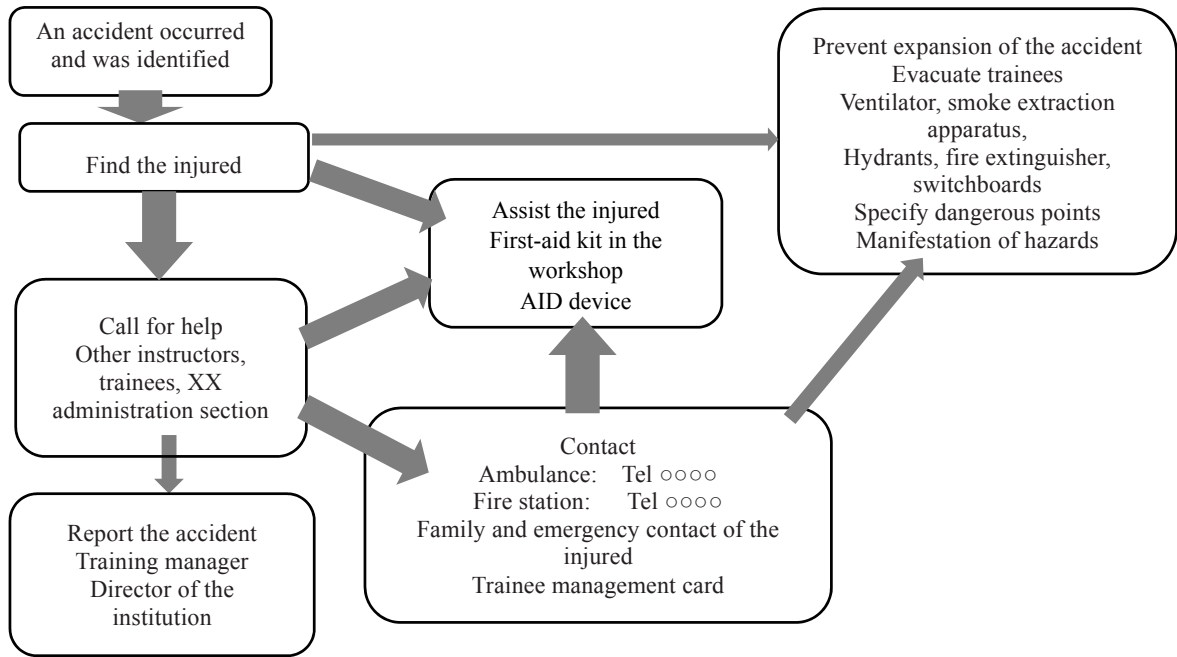


Figure 2-2 Response to Accidents, etc. in a Workshop

Table 2-11 is an example of rules for compliance of an institution. Table 2-12 shows an example of safety patrol to detect unsafe points of facilities. The safety patrol is a system for mutual assessment in which instructors patrol workshops used by other VT course instructor and other places of the facilities once every month, and detect and report unsafe points.

Table 2-11 Example of Rules Concerning Compliance (details omitted)

VT institution Basic Rules for Compliance	
(Purpose)	Chapter 1 These Rules establish basic matters concerning compliance of XX VT Institution.
(Definition)	Chapter 2 Compliance means to comply with laws and regulations, rules of XX Organization and norms at the stage of implementing training.
(System)	Chapter 3 Compliance Promotion System The highest officer to promote compliance in XX Institution is the Director. Assign a supervisory manager and a promoter. Set up a compliance supervisory council.
	Chapter 4 Response to compliance violations Provide education and training to promote compliance. Conduct internal audit to prevent compliance violation. Report happening concerning compliance violation to the promoter and the supervisory manager. If a person involved detects a happening concerning compliance violation, the person involved shall inform the point of contact. Whistleblowers will not be disclosed and suffer any disadvantage because of the reporting. If a happening concerning compliance violation is reported, the promoter and the supervisory manager shall investigate the fact. The supervisory manager shall report to the Director investigation results and provide his opinion on adequate measures. The Director shall decide a disposition considering the report and opinion of the supervisory manager.

Table 2-12 Example of Safety Patrol Format

Place to patrol			
Date		Patrol person	
Safety issues			
Condition of 4S (seiri, seiton, seiso, seiketsu or Sort, Straighten, Shine, and Sustain)		Things in a high place	
Maintenance situation of equipment and tools		High-pressure, high-temperature, high-voltage or edged places	
Other comments			

(5) Consistency of POCE

A training course with inconsistent POCE may not achieve Attainment objective and training objective. This is neither rational nor efficient because funds are misspent.

Therefore, it is necessary to check the consistency of POCE in the process of planning, design, development and implementation of a training course. Define the point to evaluate POCE of the training course in the form of training design and confirm its consistency. In a form to sort analysis and planning of a training course, for example, confirm whether the purpose of training is adequate for the challenges of society and organizations in terms of the training objective and attainment objective; whether the training objective and attainment objective are consistent with the purpose of training. At the stage of planning, establish the form to check the consistency of the attainment objective, training content and method of each subject. Confirm whether trainees can achieve the attainment objective of the course by achieving the attainment objective of subjects one by one. Also confirm whether the training content and method of each subject will lead to achievement of the attainment objective of the subject.

Formulation of a training course progresses in the order of analysis & planning, design and development. Just before moving from one stage to another, it is advisable to hold a meeting of the managers of the respective stage and the instructor to confirm the consistency of POCE (see Table 2-13).

Table 2-13 Management of Training Course Operation Process

Training course		Instructor responsible for operation	
Operation process	Evaluation item	Implementation	Remarks
Survey VT needs	Hearing survey with industrial bodies (field)		
	Hearing survey with industrial bodies (employment prospect)		
	Local implementation status of education and training		
	Confirmation of technical trends		
	Consensus forming on training needs		
Curriculum design	Consistency with training needs		
	Curriculum that enables trainees to achieve the attainment objective		
	Consensus forming on curriculum		

2.3 Management Objects (Examples of Management Items)

Preparation for implementation of training	Preparation of a classroom, workshop and equipment		
	Preparation of machines and tools		
	Preparation of raw materials		
	Preparation of training materials		
	Creation of lesson plans		
Implementation of training	Easy-to-understand instruction		
	Instruction that stimulates the motivation of the trainees		
	Evaluation that the trainees have achieved the attainment objective		
Trainee Assistance	Response to difficulty in learning		
	Response to difficulty in placement		
	Response to various challenges facing the trainees		
Evaluation of the course	Satisfaction evaluation		
	Whether the trainees have achieved the attainment objective		
	Whether the trainees utilize their acquired capabilities at work and company satisfaction		
	Are the needs of the trainees satisfied?		
	Was the course rational and efficient?		

Implementation status ○ : implemented △ : insufficiently implemented × : not implemented

(6) Training implementation organization

For efficient implementation of training, it is important that VT concerned personnel work together on the implementation of VT.

Suppose that a training planner planned a training course with a certain purpose in mind but his intention is not adequately communicated to the training designer, who designed the training carelessly with cursory interpretation of the purpose.

Again, the person responsible for development developed training materials and practice assignments without correct understanding of the intention of the designer. Not understanding the background, instructor implemented the training with an attitude that his job is simply to explain the content of the given textbook to trainees. In such a case, the trainees would not be able to achieve the attainment objective. Even if they somehow achieve the attainment objective, the training would not suit its purposed planned by.

Therefore, training organizations are required to ensure coordination among personnel and execution of duties based on the expertise of the respective persons in charge.

Implementation of a training course requires: Purpose and objective of the VT are shared in the organization; each person has a clearly defined role and ability to fulfill the role; a strong linkage is formed among roles and they complement each other if where ability is lacking, and; they love their VT jobs and work actively.

Management is needed to ensure that members comprising the organization above are carrying out appropriate activities. Specifically, managers are required to define the role and expected capabilities of each stage and evaluate their capability in some way. In addition, confirm through regular interview and other means whether managers clearly show the purpose and targets of the organization and make them understood to all and individual persons find their job rewarding, for example.

(7) Improvement of VT concerned personnel's capabilities to perform their roles

In order to adequately fulfill respective functions, VT concerned personnel need to have necessary expertise. Lack of expertise will pose an obstacle to rational and efficient implementation of training. Managers are advised to create a

list of capabilities according to their role, position and years of experience to use as a criterion training after employment, personnel assessment, promotion and other purposes. It is important to create such a list for use as a list of capabilities needed in actual work and as a formal or informal criterion for evaluation of VT concerned personnel, and actual use on a daily basis.

Managers evaluate the expertise of VT concerned personnel through regular interviews with them and observation of how they are working every day and record the results in the list of capabilities. Of special importance is the capabilities of VT instructors who implement training (see Table 2-14). Instructors are expected to give easy-to-understand lessons that motivate the trainees to learn and show an attitude to build personal relationships with trainees, for example.

Table 2-14 Training Capability

	Item	Check points	Check column
The ability to train others	• Structure of training (scenario)	<ul style="list-style-type: none"> •Have you made the points of the work clear? •Have your prepared a scenario? •Have you proceeded the lesson according to the lesson plan? •Have you indicated important points in the job breakdown sheet? 	
	• Skill of description	<ul style="list-style-type: none"> •Have you arranged the introduction, presentation, development and summary in a good balance? •Are the trainees doing work, etc. according to your explanation? •Are your vocalizing and writing on the whiteboard adequate? •Is your presentation method adequate? 	
	• Understanding of the trainees' comprehension	<ul style="list-style-type: none"> •Are you pointing out where the problem lies? •Do you know the understanding degree of the trainees at the end of the training? 	
	• Development of training materials (textbook, assignments, slides, models)	<ul style="list-style-type: none"> •Have you created training materials? •Are the textbook and other training materials free of errors? •Are the training materials effective? 	
	• Instruction and warning to trainees	<ul style="list-style-type: none"> •Are you adequately instructing the work to be done by the trainees? •Aren't there a number of trainees who have nothing to do? •Are you providing warning and instruction against unsafe actions? 	
	• Safety mind	<ul style="list-style-type: none"> •Do you execute training with safety in mind? •Do you provide the trainees with explanation about safety? 	
Zeal	• Motivation	<ul style="list-style-type: none"> •Are you always in the workshop (classroom) during the lesson? •Are you walking around to see how the trainees are working? •Do you encourage the trainees always? 	
	• Enthusiasm	<ul style="list-style-type: none"> •Do you explain kindly? •Do you talk to the trainees? •Are you answering questions also outside of training hours? 	
Interpersonal relationship	• Interpersonal relationship	<ul style="list-style-type: none"> •Is the appearance appropriate? •Do you say hello? •Do you do the conversation that accepted the scene? •Is the volume of voice appropriate? •Do you take good care of a partner? 	

2.4 Actual Evaluation

Previously, consistency of PDCA and POCE has been described. Because the addition of five-level evaluation to this will enable more effective management, this evaluation method will be explained below.

2.4.1 Five levels of VT evaluation

We have presented management items of VT from three respective which are the training objective, training target and rationality/efficiency toward objective of training. This section will introduce a perspective of evaluating VT using five levels (see Table 2-15). The five-level evaluation items supplement the management items presented above.

Table 2-15 Level Evaluation

Level 1: Evaluation of satisfaction	Are the trainees satisfied with the training?
Level 2: Evaluation of achievement Level	Have the trainees achieved the attainment objective set for the training?
Level 3: Evaluation of utilization	Did the graduates use the acquired capabilities at work?
Level 4: Evaluation of problem solving	Did the trainee succeed in the problem-solving that was the purpose of the training?
Level 5: Cost performance	Does the cost of the training match its result?

Level 1 is an evaluation to check the level of satisfaction of the trainees with the training. It includes questionnaire surveys of satisfaction level. Evaluation items of the satisfaction level survey cover a broad range including the instructor’s training method and the training content, but this is an evaluation to check the subjective impression that trainees have received from the training. We can hear what they felt directly through this evaluation.

Then, is a training course with high trainee satisfaction good training? Not necessarily. Suppose some trainees felt that they could learn in an enjoyable way and gave the lesson a high mark in terms of satisfaction level. However, if they cannot get a job, or, even if they have got a job but cannot handle their work, their skill acquirement is insufficient. This is why Level 2 evaluation comes next.

Level 2 is an evaluation to check whether the trainees have achieved the attainment objective. This is checked with theory and practice examinations at the end of the training course and other occasions. Suppose that “capable of welding outside plates of an automobile that is cut for repair (see Figure 2-3)” is set as one of the attainment objective of a car sheet metal training course. If a trainee passes a practice examination to weld a cut outer sheet of a car, he is deemed to have achieved the attainment objective. This is an evaluation that can certify the capability acquired by the trainee.

Then, is it good training if the trainees achieved the attainment objective? We cannot completely say that. What they have acquired through the training could be an old method that is not used at an actual workplace, or they might not able to perform their roles at an actual workplace with the level of skills they have acquired through the training. So we use Level 3 evaluation next.

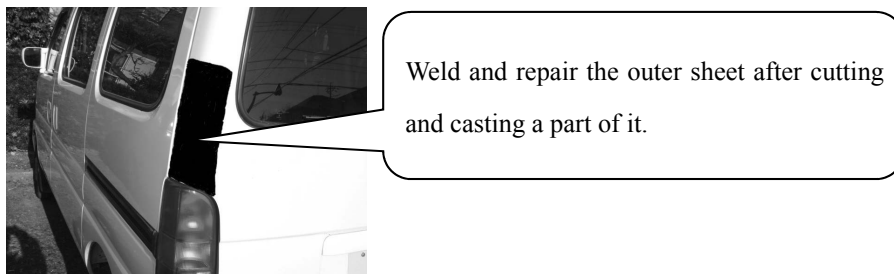


Figure 2-3 Outer Sheet Repair

Level 3 is to evaluate the level of how what had been acquired through the training was used at the workplace. Because it is assumed that VT graduates will get a job or return to their workplace, how much they can use the result of training is evaluated. The evaluation is made from two perspectives.

One is whether what they have acquired through the training is used at their workplace and the other is whether the

capability they acquired through the training is enough to work at the level required at their workplace. These are evaluated by visiting their workplace and interviewing them and their superior what work they are doing at their workplace and using what method, whether the level of the training was adequate, and other information.

After doing the evaluations up to Level 3, you may be able to judge whether the training was good or not. However, even if the trainees can use what they have learned through the training at their workplace, this may not have accomplished the task, which is the purpose of conducting the training. So, it is followed by Level 4 evaluation.

Level 4 is to evaluate whether the problem was solved, which is the purpose of the training. The problem may be to lower a high youth unemployment rate, for example. If the training was conducted to lower a high unemployment rate, to see how much the youth unemployment rate was lowered and by how much the placement rate of the graduates is higher than that of other young people will constitute Level 4 evaluation. After doing the evaluations up to Level 4, you may be able to judge whether the training was good or not. However, the budget and time for implementing good training have their limits. So Level 5 evaluation is carried out to evaluate whether the training is efficient.

At Level 5, it is evaluated whether the intended problem-solving matches the training cost. Evaluate how much it cost to enhance the evaluation of Levels 1 to 4 and whether the cost is adequate. By enhancing the evaluation of Levels 1 to 4 while reducing the cost for implementing the training you can enhance the evaluation of Level 5. This leads to the recognition that VT is necessary for the State and the region.

Each level will be explained in the following sections.

(1) L1 (Level 1): Trainee satisfaction evaluation

Satisfaction evaluation is to evaluate to what extent the trainees are satisfied with the training. The evaluation is carried out in order to find out trainees’ dissatisfaction early so that you can prevent their dropping out of the training, improve the training environment and correct poor instruction, for example. There are satisfaction evaluations at the end of individual subjects, those concerning the VT institution at the end of the training and others.

For implementation of a satisfaction evaluation, you need to suppose the expectations of the trainees on the training course. Trainees’ expectations on a training course may be roughly divided into: they are able to feel that the training is useful for their future career; it is easy to learn, and the instruction is easy to understand. You can use the question items in Table 2-16 for these categories.

Table 2-16 Example of Evaluation Items of L1

Trainees’ expectations	Items of satisfaction evaluation
They are able to feel that the training is useful for their future career	<ul style="list-style-type: none"> • Do you feel that you are learning training contents? • Do you feel that you are acquiring the ability necessary for the type of job you hope to get? • Do you feel that you will be able to get a job? • Do you feel that the training will be useful at your workplace? • Do you feel that the money and time you spend are worthwhile?
Easiness to learn	<ul style="list-style-type: none"> • Is the institution functioning? • Are there sufficient training materials and functioning tools? • Is an extreme difference in the trainees’ level of the class disturbing the progress of the training? • Is the class size small enough to receive adequate instruction?
Instruction is easy to understand	<ul style="list-style-type: none"> • Does the instructor teach in an easy-to-understand manner? • Are the assignments suitable to your learning? • Does the instructor have enough expertise in his specialized field? • Are you in a good personal relationship with the instructor? • Do you feel you are recognized by the instructor? • Is the instructor a person you respect?

Trainees do not necessarily have enough understanding of the field in which they are receiving training. If the capability required in the field is very high and therefore the training is very demanding, some may become frustrated with the demanding training. Concentration on increasing the satisfaction of the trainees could lower the evaluation of Levels

2, 3, 4 and 5. In such a case, you should not make compromises for the trainees. Level 1 evaluation has many advantages including that it is simple to implement and enables you to know the opinions of the trainees, but we should not depend on it alone. By developing a questionnaire for satisfaction evaluation (see Table 2-17) common to the whole institution and using it for all subjects, you may find out problems in the way of instruction and instructors who need support.

Table 2-17 Training Evaluation Questionnaire

Understandability of the lesson		Judgment				
1	Did the content of the lesson suit your level?	5	4	3	2	1
2	Did you think you have mastered the content of this lesson ?	5	4	3	2	1
3	Was the instructor’s explanation easy to understand?	5	4	3	2	1
4	Were the zeal, dress, volume of voice, etc. of the instructor adequate?	5	4	3	2	1
5	Did the instructor make devices to achieve the target by combining theory and practice, for example?	5	4	3	2	1
6	Did the lesson progress as planned?	5	4	3	2	1
7	Were there enough writing on the blackboard, audiovisual materials and handouts necessary for learning?	5	4	3	2	1
8	Were the writing on the blackboard, audiovisual materials and handouts easy to comprehend?	5	4	3	2	1
Describe a scene in which you felt things were easy to comprehend.						
Whether the content of the lesson will be useful for your future career		Judgment				
9	Were the attainment objective clearly specified in the lesson?	5	4	3	2	1
10	Was there an explanation of how the learning content would be useful for your future career?	5	4	3	2	1
11	Did you think you have achieved the attainment objective of the lesson?	5	4	3	2	1
12	Did you feel that the learning content will be useful for your future career?	5	4	3	2	1
Describe how you can use what you have learned.						
Whether you find the lesson interesting		Judgment				
13	Did you enjoy the lesson?	5	4	3	2	1
14	Was the class arranged to enable you to participate by saying something, practicing, for example?	5	4	3	2	1
15	Did you feel sleepy during lesson?	Yes		No		
16	If you felt sleepy, mark the three greatest causes among the following.					
	Lack of sleep	Disinterest in the content	Disinterest in the lesson			
	Irrelevant to me	Could not understand the class	The lesson was monotonous			
Describe the reason why you didn’t enjoy the lesson.						

(2) L2 (Level 2): Evaluation of attainment level toward the attainment objective

It is evaluated to what degree the trainees achieved the attainment objective of the training. Its concrete content is explained in “2. Examples of management items related to attainment objective” of 2.3.

(3) L3 (Level 3): Evaluation of utilization of training contents

Evaluation of utilization evaluates whether the trainees could use the content mastered through the training at their workplace. As already mentioned, the evaluation has two perspectives: the scope and level of the training. The first perspective is whether what was mastered through the training is used at the workplace. If what has been learned is not used at the workplace, the training missed the point. The purpose of the evaluation from this perspective is to check what kind of technologies and skills are used at work and reflect the results in training contents. The second perspective is whether the capability acquired through the training is sufficient to work at the level required at their workplace. If VT graduates

are unable to proceed actual work after practicing the assignment given to them, they would have a disadvantage in getting a job.

Let’s take the skill of repairing a car by cutting its outer sheet and welding the sheet again (Figure 2-3). In the training, trainees practice welding new steel plates that are similar to the outer sheet of a car as purchased from a shop. However, the cut outer sheets that are in actual auto-repair shops are uneven in their thickness and section width due to descaling or other works. The skill of welding new even material to be mastered through the training is ranked low among welding skills and not enough for welding of uneven materials. Utilization evaluation is made to gather information on the level of works carried out at actual workplaces to reflect it in the assignments of the training. Specifically, questionnaire surveys of the companies employing the graduates and hearing surveys of the graduates and their superiors are conducted.

Utilization evaluation may include the survey items shown in Table 2-18. Training contents are reviewed based on the information obtained through the survey. If the works carried out at an actual workplace are not covered in the training, include them. If the level of the training is lower than that at an actual workplace, devise assignments and practice methods for the training to ensure the level and scope required at the workplace.

Table 2-18 Example of Survey Items of Utilization Evaluation

Evaluation perspective	Survey item
Capability to perform at the level required at the workplace (Level)	VT graduates <ul style="list-style-type: none"> • Are you continuing to work? • Could you use what you had acquired through the training at your workplace? (Is what you have acquired through the training valid in the workplace?) • Are the content and level of the training up to the level necessary at the workplace? Questionnaire for companies (superiors) <ul style="list-style-type: none"> • Are the graduates performing at the workplace? • Is the capability of the graduates up to the level required at the workplace? • What capability do you expect from future VT graduates?
Whether the content acquired through the training is used at the workplace (scope)	VT graduates <ul style="list-style-type: none"> • What kind of work are you doing now? • What kind of work do you expect to do in the future? Questionnaire for companies (superiors) <ul style="list-style-type: none"> • What kind of works are there at the workplace? • What kind of works will increase?

(4) L4 (Level 4): Evaluation of problem solving

VT is activity to improve the capabilities of people in order to solve problems of society. Evaluation at Levels 2 and 3 evaluates whether the training could improve the capabilities of trainees. At Level 4 we evaluate to what extent the training solved a problem faced by society.

For example, if there are problems of a low skill level and a high youth unemployment rate in the region and VT is planned to solve these problems, you cannot say the intended VT was implemented without solving them. Problems facing society can be roughly classified into those of regions including the central and local governments; those of companies or industrial associations, and those of learners, their parents and other family members which explained in “1.1.2 Problems to solve”. You can make Level 4 evaluation of the extent of problem-solving more intelligible by dividing it to evaluation of far-reaching problems affecting the national and local governments and industrial associations, for example, and evaluation of problems affecting smaller communities such as individual companies, families and persons as exemplified in Table 2-19.

Table 2-19 Scope of Problem

	Affected parties	Problem	Evaluation item
Wide	Country, region, industrial associations	High unemployed in the region Shortfall in industrial human resources	Unemployment rate in the region Fill-rate of industrial human resources rate
Narrow	Companies	Unstable quality Shortfall in human resources	Level of quality stability Percentage of secured human resources
	Individual persons	Unemployment Low income	Participation rate Rate of increase in wages

Far-reaching problems will not be improved by efforts of a single VT institution only. For example, suppose that labor force of a region with a population of 300,000 is 150,000 (50%). If its unemployment rate is 5%, 7,500 people are unemployed. In order to lower the unemployment rate by 1%, you need to place 1,500 more people in employment. Can a large VT institution place 1,500 people in employment in one year? If there are multiple VT institutions in the region, it may be necessary to show how much they lowered the unemployment rate of the region in total. The local unemployment rate goes up and down due to various factors. It is advisable to study how to present figures representing the results of a VT institution considering these matters.

A statement such as “XX million among YY million unemployed gained re-employment through some kind of administrative service and VT helped ZZ thousand of them to gain re-employment” would improve public opinion of VT. You may also say “XX% of the graduates of VT institutions gained re-employment while the re-employment rate through other administrative services is YY%”.

Solving of problems of a limited range is evaluated by directly asking the graduates of the VT institution and their employers whether their problems are solved. For example, ask the wage of the graduates. You can evaluate the results of the VT institution by comparing the graduates’ entrance rate and wage after three years with those of graduates of other educational institutions and workers who did not receive VT.

(5) L5 (Level 5) : Cost performance evaluation

In order to enhance the evaluation of Levels 1 to 4 above, it is necessary to take measures such as improving equipment and employing excellent specialists. However, funds that can be used for VT have their limits. Level 5 cost performance evaluation is made to see whether the cost to enhance the evaluations from Level 1 to 4 is rational and efficient.

You can calculate training cost, for example, cost per trainee, using the method described above in “2.3.3 Management items concerning rationality and efficiency toward objective of training”. If the purpose of implementing VT is to reduce social security expense by reducing the number of unemployed, L4 evaluation of problem-solving may be compared with L5 cost performance evaluation as follows.

If an unemployed person gets a job after completing VT, benefits of the trainee, the state and the region include: the amount of administrative cost reduced by the amount of payment and unemployment allowance that would have been paid to the trainee and tax paid by the trainee from his salary. Consider that the effect of the training will continue for multiple years. Examine whether these results are rational and efficient in light of the cost of the training.

If the trainees are expected to obtain large benefits, they may bear the cost of the training. If the State is expected to obtain large benefits, the state may bear the cost and you can evaluate whether it is rational for the state to bear the cost of VT. You can evaluate the efficiency of the training by comparing the result with the placement rate of the graduates. Its rationality may be evaluated through comparison with the rate of graduates who have got a job relevant to the training.

Necessary cost varies depending on the training course. Training in a machinery field requires far more funds to obtain machineries and tools compared with training in clerical service.

In order to ensure safety, you need more instructors per trainee. These points also need attention when comparing multiple training courses.

2.4.2 Reflection of evaluation results in the training course

(1) Response at each level of evaluation

Feed back the results of evaluation from Levels 1 to 5 to all concerned personnel. Concerned personnel develop

improvement proposals, carry out concrete activities for improvement and execute the next training course. Below is the way of improvement for a training course after evaluations from Levels 1 to 4.

In Level 1 evaluation of satisfaction, if a number of trainees say that the progress of the training course is impeded because the trainees in the class are at various levels, remedies may include: dividing the class into different levels in the next training or implementing an entrance examination to ensure a certain level of trainees.

In the evaluation of class implementation, if many of the trainees state that the class is not easy to comprehend, remedies may include observing the class of the instructor, proposing improvement of parts found difficult to understand and encouraging improvement.

In Level 2 Evaluation of the attainment level toward the attainment objective, if many of the trainees have not achieved the objective, this may be because they lack sufficient ability to learn the training content or the instruction is not adequate. If the trainees lack sufficient ability, possible measures include: improving the entrance examination to select trainees who have adequate learning ability or lowering the attainment objective of the training. However, if the attainment objective is lowered, the graduates may not become capable of showing the capability required at their future workplace. If the entrance exam is made more difficult, the course might not have the intended number of trainees. It may be unreasonable to implement such a training course from the beginning. In such a case, it may be necessary to narrow the scope of the training so that the trainees can concentrate their ability or extend the training duration rather than lowering the level. Another option is to change the design of the training from learning a certain professional skill to get a job to developing basic capability to enter an apprenticeship. If the instruction is not adequate, possible measures include changing the instructor, having the instructor undergo training to improve his training capability and giving instruction under the guidance of his superior.

In Level 3 Evaluation of utilization of the training content, if it is found that the training content is not used at the workplace, the following measures may be considered. Identify what skills and operations are used at the workplace and add them to the training. If the training hours are not sufficient to do this, eliminate training contents that are not used at the workplace. In this process, it is necessary before eliminating them to consider whether the skills and operations are included in a national VT Standard or constitute the foundation of more practical skills. Even when they are included in a national standard, if they are not used at any workplace across the country, it would be necessary to work on the change of the standard.

In Level 4 Evaluation of problem-solving, the following example may be considered. The purpose of a training course was to help young people acquire capability necessary for a certain occupation and get a job, but it was difficult to get a job even for the trainees who completed the training with a good grade. In such a case, it is necessary to find out the reason why they could not get a job. If this is because the area has few workplaces in which the graduates can use the training content and experienced workers are given priority in employment at these workplaces, you may close the training course considering that training in this field is not needed in the area, or you may lobby the industry to fill the small number of available positions with the graduates. Confirm what kind of human resources are needed through close consultation with companies and industry associations relevant to the training content, promise that only the graduates who have the needed capabilities will apply for the job and ask to make a job offer (order from work) first to the VT institution. If a trusting relationship is built between companies and the VT institution, graduates of the VT institutions will be given priority in employment.

(2) Evaluation by combination of multiple levels

It is also possible to make evaluation by combining multiple levels. Figure 2-4 is evaluation that combines Levels 1, 4 and 5 with the trainee fill rate of the training course on the vertical axis and satisfaction evaluation on the vertical axis. Evaluation results of implemented training courses are plotted in Figure 2-4 to show the status of each course. This is an application of the concept of PPM (Product Portfolio Management) that examines product lifecycle.

2.4 Actual Evaluation

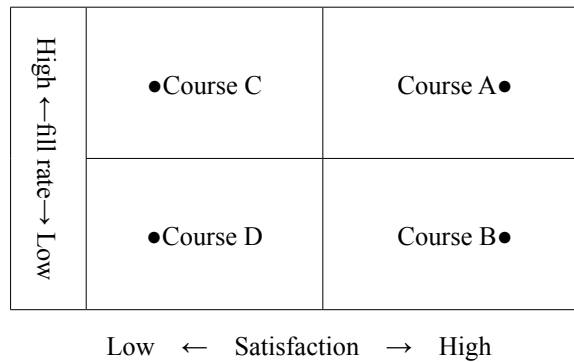


Figure 2-4 Evaluation Method

Course A is an excellent course with a high satisfaction level and fill rate. It is hoped to maintain this condition. Course B enjoys a high satisfaction level but its fill rate is low. Why is its fill rate low in spite of the high evaluation of its content and instruction method? There may be factors other than the quality of the training; lack of training needs in the region or insufficient public advertisement for example.

Course C is the worst case for a VT institution. Its satisfaction is low whereas its fill rate is high. Bad publicity of the training courses of the VT institution could spread from the large number of trainees and damage the reputation of the institution. It is necessary to improve the training content and method to increase the satisfaction as quickly as possible.

Both satisfaction and the fill rate are low with Course D. You should consider closing the course unless the course is the first attempt of the kind or otherwise has an exceptionally high potential. If the course has potential, improve its training contents and method to place at the position of Course B with high satisfaction. Next, strengthen publicity campaigns to raise its fill rate. If the publicity campaign jumped the gun and only the fill rate is raised, it would end up placing the course at the position of Course C spreading bad publicity.

PPM evaluation is a good method for comparing a number of training courses contents and identifying those that modification is needed. If a course is found to need attention, check what evaluation is given to it at each level and consider concrete measures for individual problems.

2.5 Training Management System and Evaluation Plan

2.5.1 Management system

Management of training involves evaluating training at various levels, finding problems, developing concrete measures to improve them and having VT concerned personnel implement them. In order to enhance the outcome of training, it is necessary to examine whether the management is implemented adequately. Perspectives of management system evaluation can be roughly divided into three groups. The first is whether evaluation items are collected, the second is whether improvement suggestions are extracted from them, and the third is whether the improvement suggestions are adopted. Evaluate whether the respective responsible persons are executing them on a timely basis.

For evaluation of this training management system, it is necessary to decide beforehand the schedule and workflow of who are to collect what evaluation items of Levels 1 to 5 and when, how to handle them, to whom to report, who will draft improvement suggestions based on the report, and how to develop them into definite plans and reflect the results in the next training. It is the role of the person in charge of training management to decide such schedule and workflow and ensure their implementation.

2.5.2 Evaluation plan and workflow

Evaluation should be conducted not haphazardly but systematically and continuously. To this purpose, annual operations planning of a VT institution should incorporate an improvement plan. For this, divide evaluation into that of each training course and that of the VT activity First, an example of an evaluation plan for a one-year training course is shown below (Table 2-20).

Table 2-20 Annual Evaluation Plan for Training Course

Evaluation items	First quarter	Second quarter	Third quarter	Fourth quarter
Trainees	Evaluation of attainment level of trainees by the instructor of each subject	Reporting evaluation results to HOD (Head of department)	Reporting from HOD to the Director	Director issues evaluation report
Training Course	Evaluation of satisfaction by instructor of each subject Cost Balance of training	Reporting satisfaction evaluation result to HOD Reporting the budget implementation status to HOD Situation report from HOD to the Director		Training method is improved by the instructors of the respective training subjects Reviewing the budget
	Hearing survey of VT graduates and employers by instructors Utilization of the training Problem-solving performance	Instructors sort survey results Reporting to HOD	Drafting improvement plan by instructor Reporting to HOD The chief of the training section make adjustment between training subjects Situation report from HOD to Director	Decision on the improvement plan of the training course of the next year Approval by the Director and HOD

Here is an example of evaluation plan of a VT institution that provides multiple training courses as described above (see Table 2-21).

Table 2-21 Annual VT Institution Activity for Evaluation Plan

Evaluation items	First quarter	Second quarter	Third quarter	Fourth quarter
Trainee	<ul style="list-style-type: none"> •Instructors record subject pass situations of each trainee •Assistance is provided to trainees who have not taken courses as planned •Reporting to HOD •Reporting from HOD to the Director 			<ul style="list-style-type: none"> •Director issues report cards
Training course	<ul style="list-style-type: none"> •Summarizing satisfaction evaluation of each instructor •Reporting to HOD 			
	<ul style="list-style-type: none"> •Summarization of budget implementation status of each training course •Reporting to HOD 		<ul style="list-style-type: none"> •Detection of inadequate instructors and instruction needing correction by HOD •HOD orders to adjust budget implementation 	
	<ul style="list-style-type: none"> •Instructors are ordered to conduct hearing survey of VT graduates and their employers. 	<ul style="list-style-type: none"> •HOD summarizes evaluation results •Order to the instructors to develop improvement suggestions for training course. 	<ul style="list-style-type: none"> •HOD summarizes improvement suggestions for training course. •Decision on the training implementation/ improvement of the next year •Reporting to and approval by the Director 	<ul style="list-style-type: none"> •HOD orders to revise training contents •Reflection in the recruitment guide •Preparation of annual report

The evaluation plan for training course (Table 2-20) and the VT institution activity for evaluation plan (Table 2-21) above are interlocked. Evaluation results of individual training courses are summarized and improvement of all training courses is ordered and implemented based on this. An evaluation plan schedules evaluation this way while determining the roles of each party.

Let’s look at evaluation of trainees, for example. See whether the trainees of the training course have achieved the attainment objective and successfully passed in individual training subjects. The subject passing situation is summarized periodically from the perspective of the whole institution. If any of the trainees have not passed subjects as planned, guidance will be provided in cooperation with the instructor to take supplementary lessons or the same subject again. If any trainees are not performing well, check for factors interfering with learning and think about countermeasures. If trainees accomplished the predetermined result, give them a report card, a certificate of completion and qualifications.

With respect to training courses, satisfaction with each training subject is evaluated. The results are summarized at the end of every half-year or quarter. Identify items with high trainee satisfaction and those with low satisfaction to use as information for the training environment improvement conducted by the VT institution. If there are instructors who have a very low rating by trainees, check for their conditions and give an instruction for improvement where necessary.

Conduct hearing surveys of the VT graduates and their employers concerning the training course. Collect information on whether the contents of the training course are used at the workplace, whether problems of the workplace are solved by using them, the placement rate of the graduates, and the cost of operating the training course, for example. Summarizing and analyzing the corrected information, you will consider whether to implement the course next year again, to improve or to add new contents in preparation for implementation in the next year.

It is advisable to compile the collected evaluation results and the improvement for the next year into an annual report and send it to the division supervising the VT in the region and to the local industry parties. Improvement suggestions presented together with their reasons will serve as documents when making budget requests. The local industry will increase expectations on VT and provide useful information about VT needs.

This way, evaluations together with utilization of evaluation results will fulfill an important role in maintaining and developing VT, if they are implemented continuously and systematically.