



HOME STUDY



# Certificate in Learning Evaluation & Impact

  
INSTITUTE OF TRAINING &  
OCCUPATIONAL LEARNING

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## INTRODUCTION TO THE PROGRAMME

### Using the *Programme* to develop yourself at work

A feature of this *Programme* is that it aims to increase your skills in the workplace. Thus while many of the Activities are designed to help you think more generally about the issues raised in the Module, others encourage you to relate those issues to your work, for example:

- by obtaining information about how things are done in your workplace;
- by carrying out particular projects;
- by talking to your manager and other colleagues.

These are called Workplace Activities and they should help you to improve your job performance generally by getting you to think about what you do in relation to what you are learning. We suggest that you may find it useful, as you work through the Module, to keep a working file for information or materials created as a result of Workplace Activities. Some of this work may be useful as supporting evidence for when you are assembling a Portfolio of Evidence for assessment.

It may be that you are not interested in evidence keeping, even so, you may still find it useful to look at and work through the Workplace Activities, just to see how the issues you are reading about relate to your job.

### What if I'm not currently employed in training?

As we stated initially, the aim of this *Programme* is to help you function more effectively as a trainer whether you work full-time in training or whether your training activities are just a small part of your job. But it may be that you are currently employed in a totally different field, or are not employed at all, and are looking to use this *Programme* to help you get into training. In which case, you can do one of two things:

- you can ignore the Workplace Activities and concentrate on acquiring the basic knowledge given by the text and by the other Activities, etc.;
- you can apply the Workplace Activities to other situations, such as experience you have gained in previous jobs, in your leisure activities, or through voluntary work.

## INTRODUCTION TO THIS MODULE

As a trainer you will be called upon to develop and run training for individuals and groups. An essential feature of the training process and training outcomes is the measurement of the effectiveness of that training. Measuring training effectiveness allows the trainer to:

- adapt training plans and programmes to be more effective;
- demonstrate to themselves and others that training is effective;
- plan and implement effective training.

This Module is designed to enable you, the trainer, to evaluate the training process and the effectiveness of the training carried out.

Part 1 of the Module focuses on **why** we assess the effectiveness of training and what we mean by **effectiveness**. We will also consider performance and assessment techniques and look at the validity and reliability of tests. Finally, we will consider the keeping of records relating to evaluation.

Part 2 will help you to select specific techniques for validating training. We look in detail at four levels of evaluating training:

- learner reaction to the learning event;
- the learning that takes place;
- job performance;
- departmental and organisational level.

We will also consider how the trainer should react to evaluation obtained to assist in changing or modifying training activities and events.

Part 3 concentrates on helping you to give and receive feedback to individuals and groups. We will also look at how to report to others about learners.

The aim of this Module is to help you to plan, implement, review and act upon assessment of training plans, programmes and activities.

### **Objectives**

When you have completed this Module you should be better able to:

- evaluate individual and group performance against learning objectives;
- evaluate learning programmes against the achievement of operational objectives;
- modify and adapt learning events and activities for individuals and groups;
- provide feedback to groups and individuals on their achievements;
- provide feedback to organisations about improved learning outcomes.

PART 1  
**TRAINING EFFECTIVENESS, TESTING  
AND PERFORMANCE**

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## INTRODUCTION

As a trainer you will frequently be asked the following question:

'How do you know that training is effective?'

This question has almost certainly made you think about what is meant by 'effective' and **why** you should assess the effectiveness of training. Even when you have satisfactorily answered those questions, you are faced with **how** you will do the assessment, ie. what techniques are available to you? This Part addresses these issues looking in particular at:

- internal and external validation: the process of evaluating a training plan or programme as well as its outputs;
- objective and outcome setting and how they relate to the evaluation process;
- tests for selection (norm-referenced) and to measure performance (criterion-referenced) and how they can be used in evaluation.

We will also discuss and demonstrate techniques that enable trainers to assess job performance, including:

- performance assessment techniques;
- Performance indicators that critical success factors – these show the steps in a task and help us to complete the task.

As trainer, we want to be able to measure the training output and the learner's progress during training. The tests that are useful here are summative (carried out at the end of training) and formative (carried out during training). Both kinds of test should, as far as possible, be valid and reliable; we will define these concepts and look at ways in which you can ensure the validity and reliability of tests you use in your training programmes. (We will look at the actual methods you can use – questionnaires, etc. – in Part 2.)

Finally, we will discuss the safe and secure keeping of training records and who should have access to them.

When you have completed this Part of the Module you should be better able to:

- specify why we assess the effectiveness of training;
- identify internal and external validation;
- select norm or criterion-referenced assessment;
- select appropriate performance assessment techniques;
- identify formative and summative assessment;
- design valid and reliable tests;
- record and keep appropriate training records.

### 1.1 WHY ASSESS THE EFFECTIVENESS OF TRAINING?

Put yourself in the place of a factory production manager. It is your job to oversee the production of high-quality manufactured parts. Your company has the necessary machinery and skilled staff to run that machinery. You have your raw material in a rough state ready to

be worked on. The design shop has produced the plans and sales have produced a customer. You are ready to go. Now ask yourself the question: 'How will I know that the finished goods are up to standard?'

One answer would be to make them as best you can and send them to your customer. However, this would be courting disaster. The likelihood of the finished goods being up to standard would be remote and in all probability you would lose the customer, as well as having the consignment rejected.

You would, instead, measure – ie. evaluate – materials and parts to ensure that they reached the standard required. The old adage rings true: '**you cannot manage if you cannot measure**'.

### ACTIVITY 1

List three major stages when you think measurement should occur in the process of manufacture before the finished parts are dispatched to the customer. Give your reason for selecting the stages that you have listed.

You have probably thought of the following three major stages of measurement.

- **Before manufacture:** this establishes exactly what state the raw material is in before it is manufactured. It might be that your supplier measures the raw material before dispatch to you, but you would almost certainly check those measurements yourself anyway.
- **During the manufacturing process:** as the part moves through the process a series of measurement checks ensures consistency and quality.
- **Before dispatch to the customer:** before dispatching the finished product to the customer, a final check ensures the product is up to finished standard.

It is quite likely that there would be sub-stages within the major stages listed above.

Exactly the same process applies to the training of people. Within both the public and private sectors, the issue of quality is at the forefront of debate. Quality is no longer primarily a manufacturing concern. The spotlight is now focused on all sectors in the workplace, including training. You must measure before, during and after training, in order to manage.

Not only to the three stages of quality listed above have to be followed through, there is now quite often a fourth, general state of measurement. This fourth stage is about measuring against **organisational objectives**.

- How is the product/service in question helping us to achieve our organisational objectives?

The whole question of how training helps organisations move towards achieving their objectives is currently being re-evaluated. This is set against a tradition, in many organisations, of training building up people's skills in isolation from the rest of the organisation. Training has been seen as building people's skills until they are 'fully trained', like bricks being built up to construct a house, rather than being seen as an integral part of achieving organisational goals.



It is not possible to divorce training in organisations from the concept of effectiveness. Nor can the concept of evaluation be separated from the training process.

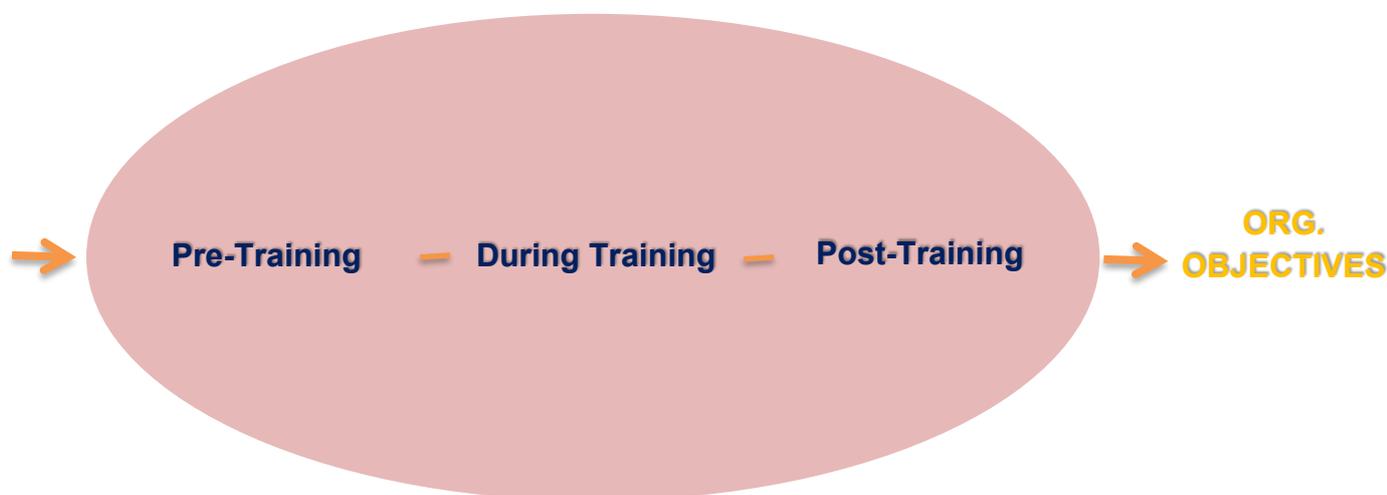
Peter Bramley, *Evaluating Training Effectiveness*, McGraw-Hill, 1991

Managers will normally ask of a training programme: 'is it effective?' and 'does it give value for money?' The two concepts overlap but are not quite the same. In many ways value for money is much easier to measure. If, for example, you train up an operative to be more skilful at operating a machine, it might be relatively easy to measure how much an organisation gains in efficiency. You could cost the training time and resources allocated against the operative's improved performance such as lower scrap rates, faster output or higher quality.

Measuring increased effectiveness is more difficult, and must be put into an organisational context and linked to organisational objectives. For example, a training event may be described as effective if the organisation's output targets are achieved, as set out in their objectives.

The examples given so far have revolved around the production process. However, the picture gets more complex when you start looking at skills that are not purely mechanical, such as human resource management. This area is more difficult to measure and is one which we shall consider later in this Part.

So far we have established that it is essential to assess the effectiveness of training. We have also established that there are three major areas in the measurement of training: pre-training, during training and post-training. There should also be a fourth, overview stage of measurement that considers how a training programme can help an organisation achieve its objectives, as show in the diagram below.



We have also shown that training should be measured in order to:

- establish the cost;
- determine its effectiveness;
- help achieve organisational objectives.

### WORKPLACE ACTIVITY 1

Identify a training plan or programme within your organisation that you are involved in and gain permission and agreement from your line manager to use that plan or programme for your own skills development.

How do you know that your training plan or programme will achieve what you want it to achieve? Note down any assessment methods included in the programme.

It may be that your training plan/programme has a full assessment and evaluation strategy. In that case follow the Workplace Activities as they occur in this Module and check the training plan/programme against them.

If you found that the evaluation and assessment strategy are not clear or do not yet exist, then use the plan or programme as a 'test-bed' as you go through the Module.

The following Cameo illustrates how one training officer set in place methods to assess the effectiveness of a training programme that he is involved in.



*Brian Scott, training officer at Delta Electronics, has selected the organisation's graduate intake programme as an example of a training programme that he will work through to look at the evaluation of training.*

*He has gained approval and permission from his training manager to use the programme as a test-bed.*

*The training programme, which lasts for five weeks, is aimed at introducing new graduate employees to the organisation. Each September there are around five to eight graduate trainees. The programme consists of an introductory induction workshop of two days – led by Brian – followed by secondment to various departments of the organisation, such as finance, sales or production, for each of the trainees. Each trainee has their own programme negotiated with department heads, the trainee and Brian. After four weeks of placements there follows a series of one-*

*to two-day workshops covering basic management techniques such as time management, presentation skills, communication skills and handling information technology. The last day is reserved for general feedback and a 'pep talk' from one of the organisation's directors. The trainees then take up their individual posts with the organisation.*

*In looking at the first question: 'How do you know that your training programme will achieve what you want it to achieve?', Brian has established that there are a number of assessment methods used.*

*The training workshops are followed by reaction questionnaires for the trainees to complete. At the end of each work placement the line manager completes an appraisal form for each trainee. At the final workshop a general reaction questionnaire is filled in by the trainees. Brian, who is present at all the workshops and monitors trainee progress through their placements, compiles a report on each trainee, followed by a general report on the whole exercise.*

*How will he measure the effectiveness of the programme? Brian is going to follow the evaluation process through the programme, compare it to what he learns from this Module and then decide if changes are appropriate. He has decided to keep all relevant documentation and evidence and to start building a portfolio of achievement.*

## 1.2 INTERNAL AND EXTERNAL VALIDATION

Having established that assessing the effectiveness of training is essential, the next question to ask is:

'What do we mean by effective?'

To return to our analogy of the production of finished goods, it is relatively simple to measure a plastic or metal object that has been produced. It is also quite easy to develop a specification for that measurement. The object is measured; if it meets the specification it is accepted. If it does not meet the specification, it is rejected and is either scrapped or reprocessed. If our imaginary production line started turning out a lot of finished objects that failed to meet the specification this would almost certainly indicate that there was something amiss with the **process** of manufacture.

Training is the same. There are two areas that we are looking at in the evaluation of training:

- the product of training – people that we train and the organisation that they work for who benefit from the training;
- the process of training – is/are the training programme/s that we are running good enough, or can they be improved?

There are two terms that we use in assessing the effectiveness of training:

- evaluation;
- validation.

**Evaluation** is concerned with assessing whether training has been worthwhile, and addresses such questions as:

- has the learning acquired been applied?
- has performance improved?
- was the training cost-effective?
- what were the benefits to the organisation?

In effect – whether or not the training was **valuable** to the organisation.

**Validation** is concerned with assessing whether the training itself worked, and addresses such questions as:

- have the learning objectives been achieved?
- have the enabling objectives been achieved?

In effect – whether or not the training was **valid** to meet the objectives set. (Objectives are briefly outlined in section 1.3 below.)

You can see that validation is part of the evaluation process. In assessing whether the training has been worthwhile (evaluation) you have to assess the appropriateness of the training itself (validation). Validation is divided into two areas.

- **Internal validation:** in training terms, internal validation is the measurement of whether a training programme has achieved its behavioural objectives or programme outcomes.
- **External validation:** conversely, external validation is concerned with looking at the process – whether the training programme was based on a valid identification of training needs that related to the organisational criterion of effectiveness.

We are looking at assessing **what** has been achieved, how **well** the training was designed and delivered, and how it **relates** to organisational objectives.

- Did the training do what it was intended to do?
- Did the training design meet the organisational requirements?

When considering these questions of organisational requirements and internal and external validation, it is essential that the requirements that are arrived at come from a training needs analysis. A training needs analysis is a structured look at an organisation and how training and other relevant factors will help in moving that organisation to achieve its organisational objectives.

## ACTIVITY 2

Think of a learning activity that you have been involved with, as a trainer or learner, in which evaluation of the training programme (the process) and the people (the product) being trained did not occur.

Make a list of at least three possible reasons why process and product were not evaluated.

(If all the learning activities you have been involved with have been evaluated, then try to think of reasons why this might not have been so for other people!)

The reason for not using evaluation could include:

- The trainer didn't think it was necessary.
- We didn't have enough time.
- We had status problems between trainer/s and trainees.
- We found it too costly.
- We found participants objected.
- I don't know why we didn't evaluate. Perhaps it was because we didn't have any learning objectives.

So what are the consequences to trainer, trainee and employer if not evaluation takes place?

Without evaluation, a **trainer** cannot:

- provide effective feedback to trainees;
- gauge the trainee's reactions to training;
- locate weaknesses within a training programme;
- assess how well the training process is accomplishing its objective.

Without evaluation, a **trainee** cannot:

- assess and record their progress towards a given standard of performance or achievement of competence;
- tell how well the training has affected workplace performance.

Without evaluation, an **employer** cannot:

- assess the effectiveness of a training programme;
- gauge the contribution of training to the organisation.

Evaluation is therefore important to all participants in a training programme. In the next section we will look at how evaluation is linked to objectives.

### 1.3 OBJECTIVE AND OUTCOME SETTING

Before you start any training programme, either individual or group based, you should develop and set clear and measurable objectives. You cannot hope to evaluate any training that is delivered without something to measure it against. Learning objectives are vital to the process of evaluation.

Learning objectives, to be fully effective, should be set in behavioural terms, ie. they should describe the behaviour that you would expect the trainees to demonstrate at the end of the training.

### ACTIVITY 3

Which of the following objectives do you think would be effective standards to measure training by? Give your reasons.

At the end of the training programme trainees should be able to:

- (a) Know all about selling cars.
- (b) Define the meaning of the term 'evaluation'.
- (c) Operate a Type 24K cash register.

Objective (a) is clearly not an assessable objective. The category is far too broad and almost impossible to achieve. Objective (b) would easily be measured by a simple test if required, either at the end of training or later on to see if the trainee has retained the definition, or both. Objective (c) is also measurable and the result of that measurement can be acted upon. If the trainee failed a test designed to test their ability to operate the register, remedial action could be taken.

As well as **learning objectives**, we should also establish **enabling objectives**. An enabling objective is used to break down the learning objective into more manageable chunks. Enabling objectives should be set at the end of **learning units**. A learning unit is a definable part of a training programme; enabling objectives are often also referred to as learning unit objectives. By measuring a number of enabling objectives you can build up to the more comprehensive learning objectives. Enabling objectives are the bricks that make up the learning objective pyramid.

### WORKPLACE ACTIVITY 2

From the training plan/programme you selected in Workplace Activity 1:

- identify learning and enabling objectives;
- link the stages of evaluation to internal and external validation.

The above Workplace Activity may require you to either:

- assess current provision if your plan/programme is an existing one; or
- develop objectives and stages of evaluation and link them to internal and external validation if you are developing a training plan/programme.

The following Cameo illustrates how the training manager we introduced on page 6 carried out this task.



*Brian Scott, training officer at Delta Electronics, has decided to identify the learning and enabling objectives of the workshop on time management that is part of his organisation's graduate induction programme.*

*As Brian does not run this particular workshop himself (his organisation employs an outside training consultancy) he has asked for a copy of the objectives from the trainer concerned. He has satisfied himself that the objectives are clear and precise.*

*Brian has also listed the stages of evaluation:*

*Pre-training: evaluation consists of the completion of a BA degree (2/2 minimum) and an interview.*

*During training: a series of assessment measures by line managers.*

*Post-training: Brian's assessment and report.*

*Organisational objectives: Brian is unclear how these are established and has decided to follow up this area in more detail.*

*Brian has established that the stages of evaluation link clearly with internal and external validation. He decides to use questionnaires to measure whether objectives have been achieved and training needs correctly identified.*

As you can see from this Cameo, Brian has made sure that he has:

- clear and precise learning and enabling objectives;
- four stages of evaluation;
- established internal and external validation.

Questionnaires (used by Brian) are one method of assessment. We will look at questionnaires and other methods in Part 2.

**SELF CHECK 1**

Before moving on, check your understanding of what you have learned by answering the following questions. You will find solutions to Self Checks at the back of the book

1. Which of the following do you think are appropriate reasons for evaluating training:

- (a) to see if training is giving value for money;
- (b) to make the trainee feel good;
- (c) to make the trainer happy;
- (d) to see if training is effective.

2. List the four stages at which we should evaluate training:

- (a) \_\_\_\_\_
- (b) \_\_\_\_\_
- (c) \_\_\_\_\_
- (d) \_\_\_\_\_

3. What form of validation would you use for:

- (a) measurement of behavioural objectives?  
\_\_\_\_\_
- (b) measurement of training design and organisational effectiveness?  
\_\_\_\_\_

4. Which of the following list should be our first priority when evaluating training:

- (a) make sure coffee is available to participants;
- (b) design a questionnaire;
- (c) set learning objectives;
- (d) set an exam;
- (e) check that the training room is free.