

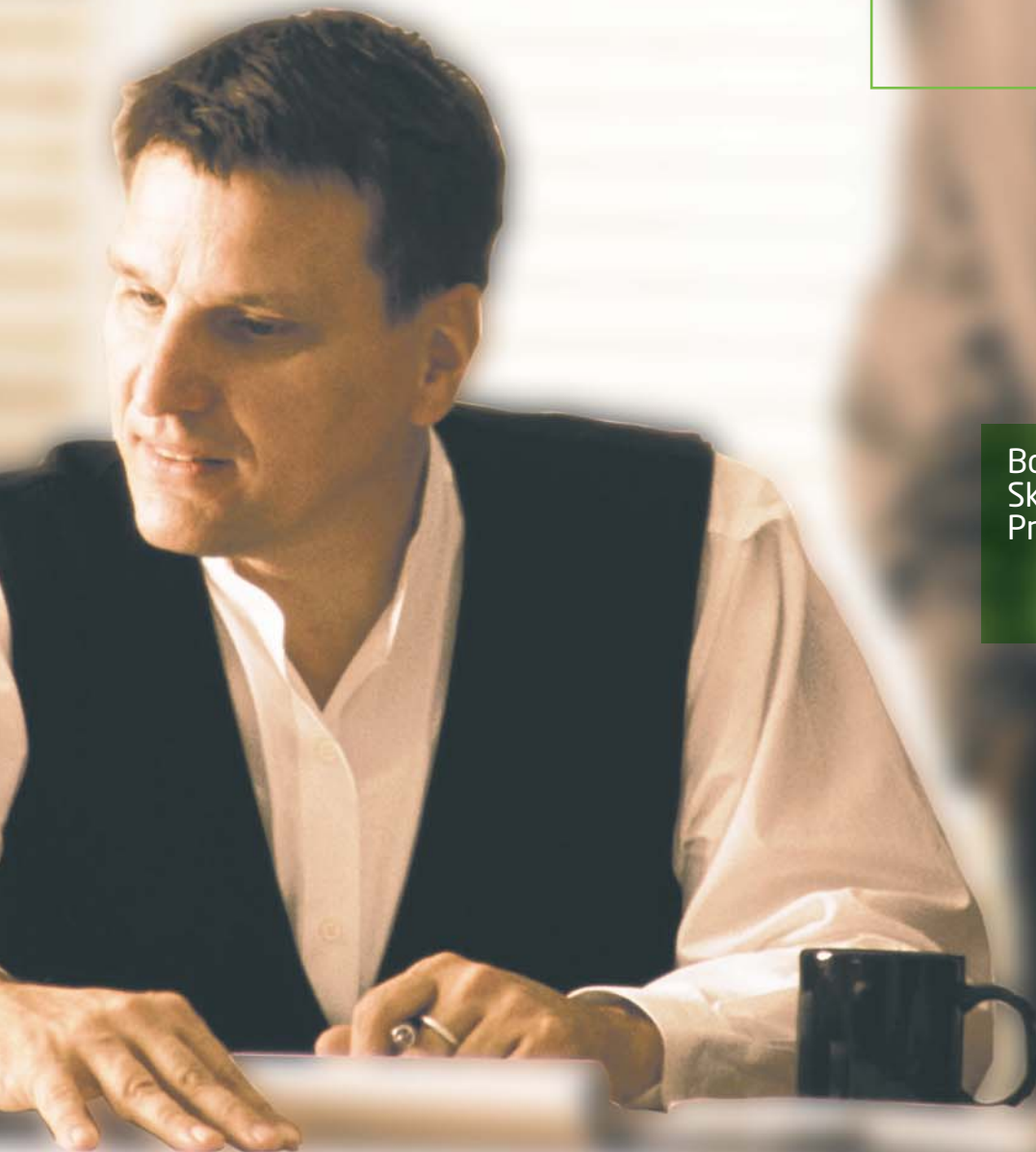
Resource Pack

Lessons and Tools
from the Skillnets
Pilot Project

Measuring the
Impact of
Training and
Development
in the Workplace

 **Skillnets**
Networked Learning

Boosting
Skills and
Productivity



Introduction

The Resource Pack for companies was developed by Skillnets Ltd as a result of its experience during a pilot project to test the applicability and usability of the Kirkpatrick and Phillips evaluation models in Irish companies.

It is designed to help you to focus on what evaluation of training is about, how to define your evaluation objectives, conduct an evaluation study and understand how to determine the return on investment of a training programme.

It provides you with an historical background to evaluation, as well as presenting you with a series of evaluation tools and job aids as well as lots of helpful tips, reminders and ways to make the job of evaluation easier and more cost effective.

Acknowledgements

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- > The Skillnets Working Group which commissioned and directed the pilot project: Niall Saul, John Dunne, Sean Heading, Maire Hunt and Alan Nuzum;
- > Gerard Doyle of the Impact Measurement Centre, who researched and prepared the first drafts and did the final editing;
- > The representatives of the 18 companies who took part in the pilot project, who are listed in the appendix;
- > The network managers of the nine Skillnets that participated in the pilot project.

Materials

Skillnets gratefully acknowledges the support of Dr Jack J Phillips and the Impact Measurement Centre in the preparation of this handbook and their permission to use some of their tools and job aids which are given due acknowledgement in the text.

Note that this is a companion volume to the

- > Final Report of the Skillnets Pilot Project, Measuring the Impact of Training and Development in the Workplace, and
- > Case Studies, Results of the Skillnets Pilot Project, Measuring the Impact of Training and Development in the Workplace.

Skillnets Ltd

Skillnets (established in 1999) is an enterprise-led support body which manages the *Training Networks Programme*, an initiative to support groups of companies to expand the quantity and quality of training in Ireland. Skillnets is funded under the National Training Fund through the Department of Enterprise Trade and Employment. The networks are financed through a co-investment arrangement with the participating companies.

Skillnets stakeholders are drawn from industry and represent employer interests from IBEC (Irish Business and employers Confederation), the CCI (Chambers of Commerce of Ireland), the CIF (Construction industry Federation), the SFA (Small Firms Association), and employee/trade union representatives from ICTU (Irish Congress of Trade Unions).

Skillnets is funded through the National Training Fund by the Department of Enterprise, Trade and Employment.

Part I - The Evaluation Process

Section 1 - Introduction

"What Gets Measured Gets Done"
Tom Peters

"If you don't measure it, you can't manage it"
Jack Phillips

What is Training Evaluation?

Wigley (1988) defines it as "a data reduction process that involves the collection of large amounts of data which are analysed and synthesised into an overall judgement of worth or merit". The implication here is that the judgement of worth (added-value) can be supported by the data.

Uses of Evaluation Data

- > To show it was the training
- > To validate training as a business tool
- > To justify the costs incurred in training
- > To help improve the design of training
- > To help in selecting training methods
- > To help with recruitment and retention
- > To focus staff development on competence improvement

Perspectives on Evaluating Training

Evaluation is often looked at from four different levels (the "Kirkpatrick levels") listed below. Note that the farther down the list, the more valid the evaluation.

- a) Reaction - What does the learner feel about the training?
- b) Learning - What facts, knowledge, etc., did the learner gain?
- c) Behaviours - What skills did the learner develop, that is, what new information is the learner using on the job?
- d) Results or effectiveness - What results occurred, that is, did the learner apply the new skills to the necessary tasks in the organization and, if so, what results were achieved?

d) Results or effectiveness - What results occurred, that is, did the learner apply the new skills to the necessary tasks in the organization and, if so, what results were achieved?

Although level 4, evaluating results and effectiveness, is the most desired result from training, it's usually the most difficult to accomplish. Evaluating effectiveness often involves the use of key performance measures -- measures you can see, e.g., faster and more reliable output from the machine after the operator has been trained, higher ratings on employees' job satisfaction questionnaires from the trained supervisor, etc.

Why do we Evaluate?

- > Investment in Training Increasing
- > Only 44% of companies measure training results
- > Primary Reason - to prove the value of training by linking it to the bottom line
 - measure result of change
 - cost control
 - build the image of the T&D function

Accountability is the Driver ...

- > Programme costs continue to increase
- > Competition for funds and resources is fierce
- > Accountability trend within all functions
- > Operating managers concerned with bottom line
- > Top management interested in results

Basic Suggestions for Evaluating Training

Typically, evaluators look for validity, accuracy and reliability in their evaluations. However, these goals may require more time, people and money than the organisation has. Evaluators are also looking for evaluation approaches that are practical and relevant.

Training and development activities can be evaluated before, during and after the activities. Consider the following very basic suggestions:

Before the Implementation Phase

1. Will the selected training and development methods really result in the employee's learning the knowledge and skills needed to perform the task or carry out the role? Have other employees used the methods and been successful?

2. Consider applying the methods to a highly skilled employee. Ask the employee of their impressions of the methods.

3. Do the methods conform to the employee's preferences and learning styles? Have the employee briefly review the methods, e.g., documentation, overheads, etc. Does the employee experience any difficulties understanding the methods?

During Implementation of Training

1. Ask the employee how they're doing. Do they understand what's being said?

2. Periodically conduct a short test, e.g., have the employee explain the main points of what was just described to him, e.g., in the lecture.

3. Is the employee enthusiastically taking part in the activities? Is he or she coming late and leaving early. It's surprising how often learners will leave a course or workshop and immediately complain that it was a complete waste of their time. Ask the employee to rate the activities from 1 to 5, with 5 being the highest rating. If the employee gives a rating of anything less than 5, have the employee describe what could be done to get a 5.

After Completion of the Training

1. Give him or her a test before and after the training and development, and compare the results?

2. Interview him or her before and after, and compare results?

3. Watch him or her perform the task or conduct the role?

4. Assign an expert evaluator from inside or outside the organization to evaluate the learner's knowledge and skills?

Measurement of Training

Training can be measured in a variety of ways including [List (Items I-V) are in increasing order of business value]:

I - Prior to training

- > The number of people that say they need it during the needs assessment process.
- > The number of people that sign up for it.

II - At the end of training

- > The number of people that attend the session.
- > The number of people that paid to attend the session.
- > Customer satisfaction (attendees) at end of training.
- > Customer satisfaction at end of training when customers know the actual costs of the training.
- > A measurable change in knowledge or skill at end of training.
- > Ability to solve a "mock" problem at end of training.
- > Willingness to try or intent to use the skill/ knowledge at end of training.

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III - Delayed impact (non-job)

- > Customer satisfaction at X weeks after the end of training.
- > Customer satisfaction at X weeks after the training when customers know the actual costs of the training.
- > Retention of Knowledge at X weeks after the end of training.
- > Ability to solve a "mock" problem at X weeks after end of training.
- > Willingness to try (or intent to use) the skill/ knowledge at X weeks after the end of the training.

IV - On the job behaviour change

- > Trained individuals that self-report that they changed their behaviour / used the skill or knowledge on the job after the training (within X months).
- > Trained individuals who's managers report that they changed their behaviour / used the skill or knowledge on the job after the training (within X months).
- > Trained individuals that actually are observed to change their behaviour / use the skill or knowledge on the job after the training (within X months).

V - On the job performance change

- > Trained individuals that self-report that their actual job performance changed as a result of their changed behaviour / skill (within X months).
- > Trained individuals who's manager's report that their actual job performance changed as a result of their changed behaviour / skill (within X months).
- > Trained individuals who's manager's report that their job performance changed (as a result of their changed behaviour / skill) either through improved performance appraisal scores or specific notations about the training on the performance appraisal form (within X months).
- > Trained individuals that have observable / measurable (improved sales, quality, speed etc.) improvement in their actual job performance as a result of their changed behaviour / skill (within X months).

- > The performance of employees that are managed by (or are part of the same team with) individuals that went through the training.
- > Departmental performance in departments with X % of employees that went through training ROI (Cost/Benefit ratio) of return on training dollar spent (compared to our competition, last year, other offered training, preset goals etc.).

Other measures

- > CEO / Top management knowledge of / approval of / or satisfaction with the training programme.
- > Rank of training seminar in forced ranking by managers of what factors (among miscellaneous staff functions) contributed most to productivity/ profitability improvement.
- > Number (or %) of referrals to the training by those who have previously attended the training.
- > Additional number of people who were trained (cross-trained) by those who have previously attended the training. And their change in skill/ behaviour/ performance.
- > Popularity (attendance or ranking) of the programme compared to others (for voluntary training programmes).

Historical Perspective

In 1959, Dr Donald L. Kirkpatrick, author, PhD, consultant, past president of the ASTD, published a series of four articles called "Techniques for Evaluating Training Programs." The articles described the four levels of evaluation that he had formulated based on his work for his PhD dissertation at the University of Wisconsin, Madison. Later, Kirkpatrick wrote a book *Evaluating Training Programs: The Four Levels*, (2nd Edition, Berrett-Koehler Publishers, Inc, San Francisco, 1998) which is now in its second edition.

Organisations using ROI in Ireland

- > Enterprise Ireland
- > Skillnets
- > Allied Irish Banks
- > Abbott Laboratories
- > Bank of Ireland
- > Kerry Group
- > Diageo
- > Novartis
- > Tara Mines
- > Lionbridge Technologies
- > Bord na Mona
- > Pat the Baker
- > Choice Hotels
- > Hilton Hotels
- > Masterchefs
- > Heineken
- > Laepple
- > Braun Oral B
- > NWHB

Kirkpatrick's four levels are: (1) **Reaction** (of the participants to the training usually measured in surveys distributed at the end of the training session); (2) **Learning** (gains in skills and knowledge achieved by the participants usually measured by pre and post tests); (3) **Behaviour** (focused on whether the skills and knowledge gained in training are applied and practiced. This is usually measured on the job three months or more after training); and (4) **Results** (or ultimate outcomes of the training in terms of company goals). Kirkpatrick's model has been amended slightly over time to include a fifth level (5) **ROI** by Dr Jack J. Phillips measuring return on investment of level four results (Phillips 1996).

Kirkpatrick alluded to ROI when he created level four linking training results to business results but never elaborated it further. However, over time the need to measure the monetary value impact of training became so important to corporations that a fifth level became essential. Dr. Phillips outlines his approach to Level Five in his book *Return on Investment in Training and Performance Improvement Programs* (Butterworth Heinemann Publishers, Inc, Woburn, MA 1997). Dr. Phillips has written extensively on the subject, publishing or editing dozens of books on the topic of ROI.

Ideally, according to Kirkpatrick, evaluation should be conducted at all four levels because the agreement or coherence in the findings across the levels strengthens the conclusions significantly. However, largely due to the high cost of evaluations, such a comprehensive approach is not normally implemented by firms in practice.

Despite the fact that the evaluation model introduced by Kirkpatrick is now 45 years old, its elegant simplicity has caused it to be the most widely used method of evaluating training programmes worldwide. The American Society for Training and Development (ASTD) reported feedback from almost 300 HRD executives and managers in 2000 which revealed that 67% of organisations that conduct evaluations use the Kirkpatrick model.

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Return on Investment (ROI)

Calculating Return-on-Investment (ROI) is a practice of modern management used in the analysis of many business strategies and operations. It is a standard measure used for predictive and diagnostic evaluation of business initiatives. Perhaps the most popular application of this tool is in the analysis of purchase decisions for investments in capital equipment or technology. ROI is simply a measure of benefit versus cost. Expressed as a percentage, ROI is determined by total net present benefits divided by total net present costs. Benefits and costs are converted into present values since they usually accrue over extended periods of time. In the context of training ROI is a measure of the monetary benefits obtained by an organisation over a specified time period in return for a given investment in a training programme.

One of the earliest methods for evaluating training and performance improvement investments was the cost-benefit analysis process. The cost-benefit analysis compares the benefits of a program to its costs through a benefit-cost ratio (BCR) (Thompson 1980; Kearsley 1982; Nas 1996; Phillips 1997b). In formula form, the BCR calculation is: A benefit-cost ratio of one means that the benefits equal the costs. A benefit-cost ratio of two, written as 2:1, indicates that for each monetary unit spent on the programme two units were returned as benefits.

ROI, on the other hand, compares the net programme benefits and costs. The ratio is usually expressed as a percent by multiplying the fractional values by 100 (Phillips 1997). ROI can be used both to justify a planned investment and to evaluate the extent to which the desired return was achieved. To calculate ROI you must first make estimates or obtain measurements of the costs and benefits associated with a training programme.

Since the 1970s two basic approaches have evolved to conducting ROI analysis of training. Each confronts a different set of challenges. Until the late 1980s the most common approach was to view the measurement of ROI as a separate, discrete function independent of the training under evaluation. The advantages of this

approach are simplicity, efficiency, and clarity in purpose and operation; it generally requires fewer resources and is less costly. However, this approach does not produce a rigorous and systemic approach to ROI.

The second approach, which is more broadly conceived, and is now the most widely used is based on the premise that ROI is most effective when designed and implemented as an integral part of the whole training process. A comprehensive framework for ROI implementation incorporates all the phases of training, from initial training needs assessment and planning, program design, benchmarks and measures, data reporting and collection, through final evaluation (Darling 1993).

Linkage Between the Five Levels

Crucial to this broad based approach is the chain of impact or linkage between the five levels. Phillips emphasises the "chain of effect" implied in the five-level evaluation model shown in Figure 3.1. Initially, it's essential to derive the measurable results of training from participants' application of new skills or knowledge on the job over a specific period of time after training is completed, a level 3 evaluation. Logically, successful on-the-job application of training content should stem from participants having learned new skills or acquired new knowledge, a level 2 evaluation. Consequently, for a business-results improvement (a level 4 evaluation), the chain of effect implies that measurable on-the-job applications (level 3) and improvement in learning (level 2) are achieved. Without this preliminary evidence, it's difficult to isolate the effect of training or to conclude that training is responsible for any performance improvements. Practically speaking, if data is collected on business results (level 4), data should also be collected at the other three levels of evaluation. This applies equally to return on investment (level 5 evaluation).

A Systematic Evaluation Model

Despite numerous obstacles, considerable progress has been made in developing methodologies to evaluate training and to calculate its ROI, reflective of a growing recognition of the importance of training. Jack Phillips has pioneered efforts to develop, systematise, and improve the practical evaluation methods used by training professionals and managers in the field. Phillips presents the most thorough ROI model, comprising 18 steps, emphasising a systemic approach to training evaluation. (See Table 1)

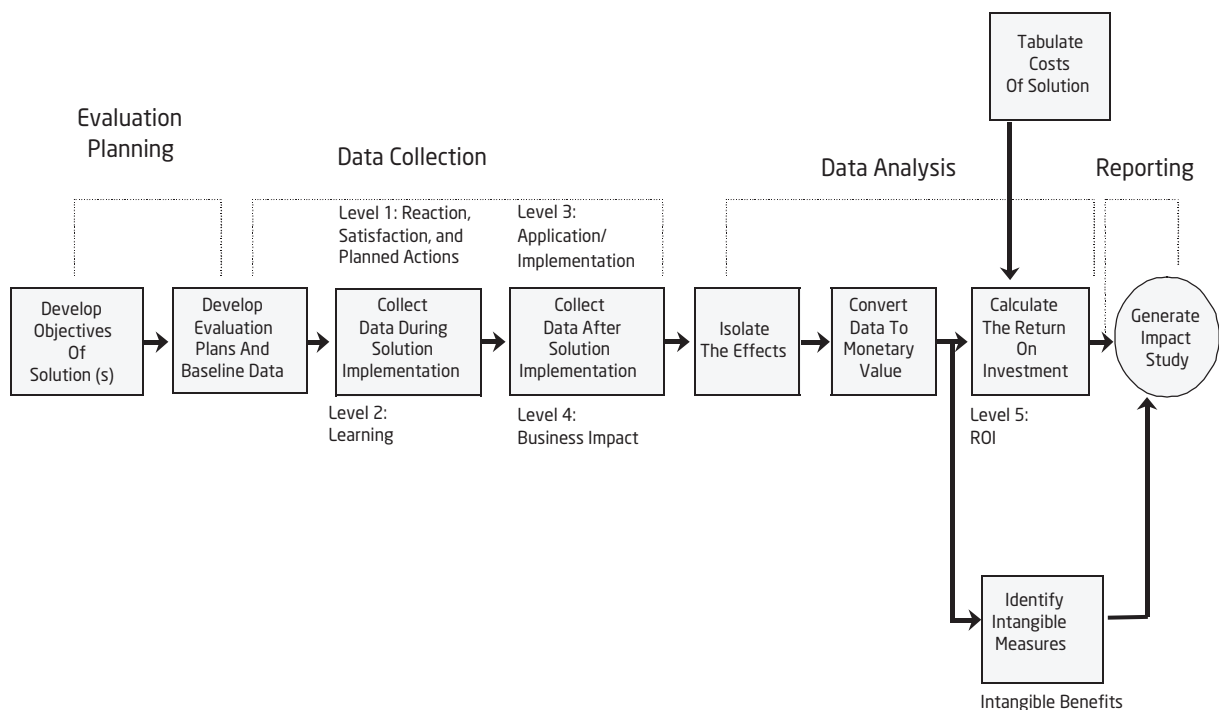
Table 1. A Systemic Evaluation Model: 18 Steps

1.	Conduct a needs assessment and develop tentative objectives
2.	Identify purposes of evaluation
3.	Establish baseline data
4.	Select Evaluation method/design
5.	Determine evaluation strategy
6.	Finalize programme objectives
7.	Estimate programme costs/benefits
8.	Prepare and present proposal
9.	Design evaluation instruments
10.	Determine and develop programme content
11.	Design or select delivery methods
12.	Test programme and make revisions
13.	Implement or conduct programme
14.	Collect data at proper stages
15.	Analyse and interpret data
16.	Make programme adjustments
17.	Calculate return on investment
18.	Communicate programme results

Source: Phillips (1997)

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Figure 1 Phillips' Model for Determining the Return to Investment in Human Resource Development (HRD)



Source: Phillips (1997)

The crucial elements in this model, for those who wish to go as far as calculating the ROI of a training programme, commence at Level 4. Phillips' specifies the steps thereafter as follows:

1. Collect Level-4 evaluation data. Ask: Did on-the-job application produce measurable results? 2. Isolate the effects of training from other factors that may have contributed to the results. 3. Convert the results to monetary benefits. Phillips recommends dividing training results into hard data and soft data. He says hard data are the traditional measures of organisational performance because they're objective, easy to measure, and easy to convert to monetary values. They include output (units produced, items assembled, tasks completed); quality (scrap, waste, rework); time (equipment downtime, employee overtime, time to complete projects); and cost (overhead, accident costs, sales expenses). Conversely, soft data includes such things as work habits

(tardiness, absenteeism); work climate (grievances, job satisfaction); attitudes (loyalty, perceptions); and initiative (implementation of new ideas, number of employee suggestions). 4. Total the costs of training. 5. Compare the monetary benefits with the costs. 6. The non-monetary benefits can be presented as additional - though intangible - evidence of the programme's success.

To define the Return on Investment, Phillips recommends that the following formula should be used:

Benefits/
Cost Ratio = Programme Benefits/
Programme Costs

ROI = Net Programme Benefits/
Programme Costs

Phillips's ROI Methodology applies a range of unique tools and techniques that enable the practitioner to complete difficult and challenging tasks such as: identifying business results of training and then converting them into monetary values, isolating the effects of the training from other factors that could have contributed to the results and identifying intangible benefits.

That is done through a lengthy, painstaking and hair-splitting evaluation involving tools such as focus groups, follow-up questionnaires, trend-line analyses and "controlled" studies, where employees are split into two groups, but only one receives training so the results can be compared.

The crucial point comes before any final calculation, when the impact of learning has to be isolated from gains in revenue, performance or productivity that might have accrued because of outside circumstances--seasonal sales variation, for instance. Phillips has established a set of guidelines so that results are standardised. These include a rule that only the most conservative data can be included in the formulas. Phillips's formulas have taken root in at least 1,000 private and public-sector organisations in 40 countries.

Choosing the Right Evaluation Level

During the development stage of the project the consultants worked with the participating companies to help them to decide which evaluation level to work towards taking account of individual circumstances. Companies were advised of the need to collect data at lower levels where a higher level evaluation is to be carried out. However, Phillips ten "Guiding Principles" (No 2) states that "when an evaluation is planned for a higher level, the previous level of evaluation does not have to be comprehensive." Fig 3.3 is a guide as to the average percentage evaluation at each level.

Figure 2: Percentage Evaluation at Each level. Source: ROI Institute™ 2000

Level	Percent Evaluated
1. Reaction, Satisfaction, Planned Action	100%
2. Learning	60%
3. Application/Implementation	30%
4. Business Impact	10-20%
5. ROI	5-10%

Evaluation Planning

"Evaluation starts before the training starts" (Ideally!!)

1. Conduct a Needs Analysis
 - > Performance Gaps
 - > Reasons for Gaps
 - > Training needs
2. Develop Training Objectives (Workbook)
 - > Specify variables to be influenced by the training
 - > Hard Data - Output increase, quality improvement, time savings, cost savings
 - > Soft Data - customer satisfaction, employee satisfaction, etc
3. Develop Evaluation Plans
 - > Data Collection Plan
 - > ROI Analysis Plan
4. Collect Baseline Data
 - > Some Time Before training
 - > Immediately Before training
 - > Immediately After training
 - > Some Time After training

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What is the True Value of Training?

When we speak of measuring the results of training -- and we mean results beyond those of simply equipping people with the skills and knowledge necessary to carry out their assigned tasks and duties -- we are redefining training as an intervention, as a solution to some problem other than equipping people to do their jobs.

In cases where skill and knowledge deficiencies are leading to mistakes, errors, defects, waste, and so on, one might argue (and many do) that training which eliminates these deficiencies and in turn reduces mistakes, errors, defects, and waste, is a solution to a performance problem. This argument is extended to assert that the reductions in mistakes, errors, defects, and waste, as well as the financial value of any such reductions constitute the "results" of training.

The logic of this argument has a certain superficial appeal but it is far from impeccable and even farther from compelling. In short, it does not withstand serious scrutiny. It is frequently pointless to ask "What business results were achieved as a result of training?" because the goal of training is generally one of preventing mistakes, errors, defects, and waste, not correcting them. Thus, by a strange twist of circumstances, the only way to prove that such training is successful is to shut down the training. As is the case with some other things, it is sometimes the case with training that the true measure of its value lies in its absence, not its presence, but shutting down training is hardly a practical way of testing that proposition.

Nickols, Frederick W. (1982, April). "Training: a strategic view." (NSPI Journal.)

Implementation Guidelines for the Four Levels of Evaluation¹*Reaction*

Reaction may best be defined as how well trainees like a particular training programme. Evaluating in terms of reaction is the same as measuring trainees' feelings. It doesn't measure any learning that takes place. And because reaction is easy to measure, nearly all training directors do it.

It's important to measure participants' reactions in an organized fashion using written comment sheets that have been designed to obtain the desired reactions. The comments should also be designed so that they can be tabulated and quantified. The training coordinator, director, or other trained observer should make his own appraisal of the training in order to supplement participants' reactions. The combination of two evaluations is more meaningful than either one by itself.

Level 1 - Data Collection

- > Data Collection Instruments:
 - Questionnaires
 - Interviews

Data Collected at end of training

**Level 1 - What to Include in Questionnaires
Keys to Successful Use of Questionnaires**

- > Explain the Purpose
- > Keep it Simple
- > Keep it Short
- > Make it Easy
- > Make it Anonymous
- > Collect daily rather than wait until the end
- > Process it Quickly

¹ As published by Dr Donald J Kirkpatrick (1997)

When training directors effectively measure participants' reactions and find them favourable, they can feel proud. But they should also feel humble; the evaluation has only just begun. Even though a training director may have done a masterful job measuring trainees' reactions, that's no assurance that any learning has taken place. Nor is that an indication that participants' behaviour will change because of training. And still further away is any indication of results that can be attributed to the training.

- > Determine what you want to find out.
- > Design a form that will quantify reactions.
- > Encourage written comments and suggestions. Attain an immediate response rate of 100 percent.
- > Seek honest reactions.
- > Develop acceptable standards.
- > Measure reactions against the standards and take appropriate action.
- > Communicate the reactions as appropriate.

Learning

It's important to determine objectively the amount of learning that takes place. For our purposes, learning is defined in a rather limited way: What principles, facts, and techniques were understood and absorbed by trainees? We're not concerned with on-the-job use of the principles, facts, and techniques.

Level 2 - Learning

- > Data Collection Instruments
 - Questionnaires
 - Tests and Exercises
 - Observations
 - Job Simulation
 - Peer Assessment
 - Self Assessment
 - On-line testing

Data collected during or at end of training

Here are some guideposts for measuring learning:

- > Measure the learning of each trainee so that quantitative results can be determined.
- > Use a before-and-after approach so that learning can be related to the programme.
- > As much as possible, the learning should be measured on an objective basis.
- > Where possible, use a control group (not receiving the training) to compare with the experimental group that receives the training.
- > Where possible, analyze the evaluation results statistically so that learning can be proven in terms of correlation or level of confidence.
- > Evaluate knowledge, skills, or attitudes both before and after the training.
- > Attain a response rate of 100 percent.
- > Use the results of the evaluation to take appropriate action.

Behaviour

Evaluation of training in terms of on-the-job behaviour is more difficult than reaction and learning evaluations. It requires consideration of many factors.

Here are several guideposts for evaluating training in terms of behavioural changes:

- > Conduct a systematic appraisal of on-the-job performance on a before-and-after basis.
- > The appraisal of performance should be made by one or more of the following groups (the more the better): trainees, trainees' supervisors, subordinates, peers, and others familiar with trainees' on-the-job performance.
- > Conduct a statistical analysis to compare before-and-after performance and to relate changes to the training.
- > Conduct a post-training appraisal three months or more after training so that trainees have an opportunity to put into practice what they learned. Subsequent appraisals may add to validity of the study.

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- > Use a control group, if feasible.
- > Allow enough time for a change in behaviour to take place.
- > Survey or interview one or more of the following groups: trainees, their bosses, their subordinates, and others who often observe trainees' behaviour on the job.
- > Choose 100 trainees or an appropriate sampling.
- > Repeat the evaluation at appropriate times.
- > Consider the cost of evaluation versus the potential benefits.

Level 3 - Application/Implementation

- > What new or improved *knowledge* was applied on the job?
- > What is the *frequency of skill* application?
- > What new *tasks* are being performed?
- > What new *steps* have been implemented?
- > What new *action items* have been implemented?
- > What new *procedures* have been implemented or changed?
- > What new *processes* have been implemented or changed?
- > Data Collection Instruments
 - Surveys
 - Questionnaires
 - Interviews
 - Focus Groups
 - On-the-Job Observation
 - Action Plans
 - Follow-up sessions

Data collected 1-8 weeks after training

Business Results

The objectives of most training programmes can be stated in terms of the desired results, such as reduced costs, higher quality, increased production, and lower rates of employee turnover and absenteeism. It's best to evaluate training programmes directly in terms of desired results. But complicating factors can make it difficult, if not impossible, to evaluate certain kinds of programmes in terms of results. It's recommended that training directors begin to evaluate using the criteria in the first three steps: reaction, learning, and behaviour.

- > Use a control group, if feasible.
- > Allow enough time for results to be achieved.
- > Measure both before and after training, if feasible.
- > Repeat the measurement at appropriate times.
- > Consider the cost of evaluation versus the potential benefits.
- > Be satisfied with the evidence if absolute proof isn't possible to attain.

Questions to ask to get to Level 4

- > What do you want to change
- > What will it look like when its changed
- > How does it look now
- > What direct measures reflect the change (output, quality, cost, time)
- > What indirect measures reflect the change
- > Who can provide information on the relationship between training and the business measures
- > What other factors will influence these business measures
- > What solutions have been tried
- > Data Collection instruments
 - Performance Monitoring Records
 - Action Plans of trainees
 - Performance Contracting
 - Assignments related to the training
 - Follow-up Questionnaires/Surveys
 - Observations on the Job
 - Follow-up interviews with end users/performers
 - Follow-up Focus Groups
 - Follow-up group session

Data collected 1-6 months after training

Return on Investment: Do It & Prove It

The strict definition of ROI is that it is a percentage derived from the benefits of a particular programme-- money made or saved--divided by the programme's cost. For instance, if a €100,000 learning programme results in €1 million in additional profit, it has an ROI of 1,000 percent.

A strong ROI implies that a learning programme is tied tightly to overall business goals. An ROI analysis can spare learning from the budget-cutting axe, unshackle funding for progressive programmes, and, ultimately, prove that training is an essential company initiative with a positive impact on the bottom line.

Surprisingly, only 14 percent of organizations ever quantify their return-on-investment, according to a December 1998 survey by the American Management Association. Further, AMA's director of management studies Eric Rolfe Greenberg notes, "No two people do it the same way, which is a big reason why some companies that used to conduct such an analysis no longer do one." As a result, the vast majority of corporate learning is an act of faith: Competitive companies have high-performing employees, so training must be good.

The obstacles

Though there is a definite need for ROI, calculating it remains difficult. Why is ROI so hard to quantify? One, it's extremely challenging to isolate benefits that result from corporate learning programmes. If a company's sales force brings in 25 percent more revenue in the 12 months following a sales training programme, can you prove that the revenue resulted from the training rather than skilful management, a restructuring of incentives, strategic hiring and firing, marketplace shifts, or just good sales people?

Isolate the Effects - Was it the Training?

- > Use of Control Groups
- > Trend Line Analysis
- > Forecasting methods
- > Performers estimate of impact
- > Supervisors estimate of impact
- > Managements estimate of impact
- > Subordinates report of other factors
- > Use of experts/previous studies
- > Calculate/Estimate the impact of other factors
- > Customer input

Likewise, it's challenging to develop a big-picture view of the costs and benefits of corporate learning. Several departments might be responsible for managing the necessary data for an ROI calculation, forcing managers to spend a lot of time tracking and sorting the data. In all likelihood, solid ROI calculation starts with the small picture: quantifiable variables such as tuition costs,

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number of certifications, and a comparison of before-and-after numbers.

More important, ROI often runs counter to traditional methods of evaluation. The often-used--but deservedly maligned--smile sheets are frequently irrelevant to ROI. Smile sheets are subjective and say little about whether the learning objectives support the business and even less about whether learning occurred. Similarly, pre- and post-assessments that try to calculate the transfer of learning to the job suffer because they presume that training was necessary.

The groundwork

Here are several things a company can do to lay the groundwork for calculating and securing positive, accurate, and persuasive ROI.

Consider the solution. Before you commit to training, identify your business problem, and make certain training is the best solution. For example, if the problem is inefficiency, maybe faster computers and a more powerful network are the solution rather than a week-long course on mastering Microsoft Office.

Get a baseline. To calculate training benefits, quantify the before picture. Measure everything that training might improve. For instance, if you're training 100 employees about sexual harassment, review the number of employees, any claims over the past five years, and insurance premiums and the cost of penalties.

Automate. Learning management software can track such data as courses taken and learners' performance before and after.

Minimize costs. Because ROI is the ratio of training benefits to costs, you can improve results by lowering the denominator. Try putting learning online, limiting the number of students, shortening classes, scheduling training after work, increasing the learner-instructor ratio, and minimizing custom course development.

Maximize training benefits. Reinforce training benefits through practice and positive reinforcement such as rewards, notes, special honours, or a companywide email. Those measures can galvanize results and magnify training effectiveness.

Convert soft concepts to hard numbers. If you're training for productivity, measure the widget output. If you make widgets, measure client satisfaction levels before and after training. If you teach computer skills, measure document output, help-desk call reduction, router deployment, or network uptime.

Consider the payback period. ROI is just a percentage, so include the payback time to make it persuasive. For example, if a €100,000 training investment is generating €400,000 a year in profit, it pays for itself within three months. That's a measure anybody can understand. Costs divided by monthly benefits yield the number of months to payback.

The formula

Once a company has laid the groundwork, it can apply an ROI formula. Training ROI formulas vary, but here's a sound one used by Dr Jack Phillips.

Start by adding costs over the training period for design and development, promotion, administration, delivery (staff or technology), materials, facilities, employee wages, lost productivity, and evaluation.

Next, tally the benefits, including labour savings, productivity increases, income generation, new leads, new products, and other cost savings such as lower maintenance, turnover, and debt costs. Finally, divide benefits by costs and multiply by 100 to get ROI.

Identify Intangible Benefits

Definition: "Benefits of the programme which cannot, or should not, be converted to monetary values"

- > Increased Job Satisfaction
- > Increased Organisational Commitment
- > Improved Teamwork
- > Improved Customer Service
- > Reduced Complaints
- > Reduced Conflicts
- > Reduced Stress
- > Increased Flexibility

The case studies

See the Skillnets ROI case studies book, a companion volume to this one. It has 15 case studies of Irish companies that have completed full ROI studies.

Hard and Soft Data

It can be useful to divide training results into two measurement camps--hard data and soft data. Hard data is the traditional measure of organizational performance; it's objective, and it's easy to measure and transfer to monetary values. Soft data, on the other hand, is typically the measure of soft skills such as communication. It is subjective and more difficult to measure and to transfer to monetary values.

Here are some examples of hard and soft data.

Hard Data*Output*

- > units produced
- > items assembled or sold
- > forms processed
- > tasks completed

Quality

- > scrap
- > waste
- > rework
- > product defects or rejects

Time

- > equipment downtime
- > employee overtime
- > time to complete projects
- > training time

Cost

- > overhead
- > variable costs
- > sales expenses

Soft Data*Work Habits*

- > employee absenteeism
- > tardiness
- > visits to the dispensary
- > safety-rule violations

Work Climate

- > employee grievances
- > employee turnover
- > discrimination charges
- > job satisfaction

Attitudes

- > employee loyalty
- > employees' self-confidence
- > employees' perceptions of job responsibilities
- > perceived changes in performance

New Skills

- > decisions made
- > problems solved
- > conflicts avoided
- > frequency in using new skills

Development and Advancement

- > number of promotions or pay increases
- > number of training programmes attended
- > requests for transfer
- > performance appraisal ratings

Initiative

- > implementation of new ideas
- > successful completion of projects
- > number of employee suggestions

Part I - The Evaluation Process

Top Ten Reasons Why Evaluation Fails

Deborah Gwinner, a change management consultant at Accenture, cites these reasons that companies fail to do training evaluation correctly and thereby fail to get valid business or performance results. The reasons, listed in order of process, are

1. lack of planning
2. assumption that training is a cost rather than an asset
3. lack of sponsorship
4. lack of budget
5. lack of appropriate resources (such as skilled and experienced people in the area in question)
6. lack of understanding what's important to measure (results don't match key performance measures)
7. evaluation techniques that don't capture human performance, only the performance of the trainers and training materials
8. lack of valid measurements, resulting in false data reports
9. lack of data collection
10. lack of data analysis and summary

Reference Material / Books

- > *The Balanced Scorecard*, by Kaplan and Norton. Harvard Business School Press, 1996
- > *"Putting the Balanced Scorecard to Work,"* by Kaplan and Norton. Harvard Business Review, September-October 1993
- > *"The Balanced Scorecard--Measures that Drive Performance,"* by Kaplan and Norton. Harvard Business Review, January-February 1992
- > *Evaluating Training Programmes: The Four Levels*, by Donald J. Kirkpatrick. Berrett-Koehler Publishers, 1994
- > *Handbook of Training Evaluation and Measurement Methods*, by Jack J. Phillips. Gulf Publishing, 1997
- > *The training evaluation process: A practical approach to evaluating corporate training programmes*. David J Basarab Sr (Manager of Evaluation, Motorola University, USA) Kluwer Academic Publishers, 1992, Published in Netherlands.
- > *The Trainers guide: a practical manual for the design, delivery and evaluation of training*. Richard L Sullivan Aspen Pub Inc, 1990, Published in USA.
- > *An Evaluation of audit training centres in Scotland* Philip Seed, Margaret Thomson, Fiona Pilkington, The Stationery Office Agencies, 1998, Published in UK Published in association with Scottish Office. Central Research Unit
- > *Evaluating corporate training: models and issues* Stephen M Brown. Kluwer Academic Publishers, 1997

Part 2 - Evaluation Tools and Job Aids

Section 1 Evaluation Process Outline Levels 1-5

Level	Objectives	Tools to be Used
Baseline Data	<p>To establish basic data for</p> <ul style="list-style-type: none"> > the network > the companies > the trainees 	<p>Recommended detailed lists are in Section 2.</p>
Level 1: Reaction	<p>Were the participants satisfied with the training? What do they plan to do with what they have learned?</p> <ol style="list-style-type: none"> 1. Measurement of trainee satisfaction at end of training. 2. Willingness to try or intent to use the skill/ knowledge at end of training. 3. Number (or %) of referrals to the training by those who have previously attended the training. 	<p>A standard form is recommended to be used (ref objectives 1 and 2) by all trainees taking part in the pilot - please see Form S1 in Section 3.</p> <p>The trainer will also complete an evaluation and can set a mock problem at end of training (obj 3).</p> <p>Obj 4 to be picked up on Form S1 for later trainees.</p>
Level 2: Learning	<p>What skills, knowledge, or attitudes have changed? By how much?</p> <ol style="list-style-type: none"> 1. Trainee satisfaction at 4 weeks after the end of training. 2. Retention of Knowledge at 4 weeks after the end of training. 3. Willingness to try (or intent to use) the skill/ knowledge at 4 weeks after the end of the training. 4. Ability to solve a "mock" problem (test) at end of training. 5. Additional number of people who were trained (cross-trained) by those who have previously attended the training, and their change in skill/ behaviour/performance. 	<p>Two standard forms are recommended to be used by all trainees 4 weeks after the training, (objs 1,2,3) as well as by the trainee's supervisor - please see Form S2 and S4 in Section 3.</p> <p>Trainers may also design tests (obj 4) linked to performance: If participants need to know something, the test will measure knowledge (multiple choice, true-false, essay, matching, short-answer). If participants need to do something, the test will measure behavioural (i.e., role plays or demonstrations) with a measurement instrument (Behaviour Checklist, Behaviourally Anchored Rating Scale, Behaviour Frequency Checklist, Best-Solution Approach). Obj 5 to be picked up on Form S4 by the Supervisor.</p>

Part 2 - Evaluation Tools and Job Aids

Section 1 Evaluation Process Outline Levels 1-5

Level	Objectives	Tools to be Used
Level 3: Behaviour	<p>Did the participants change their behaviour based on what was learned?</p> <p>(a) <i>Assessment of on-the-job behaviour change</i></p> <ol style="list-style-type: none"> 1. Trainees who self-report that they actually changed their behaviour/used the skill or knowledge on the job after the training (within 3-4 months). 2. Trainees who's supervisor reports that they actually changed their behaviour / used the skill or knowledge on the job after the training (within 3-4 months). 3. Trainees that actually are observed to change their behaviour / use the skill or knowledge on the job after the training (within 3-4 months). <p>(b) <i>Assessment of on-the-job performance change</i></p> <ol style="list-style-type: none"> 4. Trainees that self-report that their actual job performance changed as a result of their changed behaviour / skill (within 3-4 months). 5. Trainees who's supervisor's report that their actual job performance changed as a result of their changed behaviour / skill (within 3-4 months). 6. Trainees that have observable / measurable (improved sales, quality, speed etc.) improvement in their actual job performance as a result of their changed behaviour / skill (within 3-4 months). 7. The performance of employees that are managed by (or are part of the same team with) individuals that went through the training. 8. Departmental performance in departments with 10 % + of employees that went through training 	<p>Each trainee will complete an S3 Form at the end of the pilot. In addition their work supervisor will complete an S4 Form at the end of the pilot.</p> <p>Items 4 to 8 will be assessed by interviews with supervisors.</p> <p>In some companies it may be appropriate to consider the use of a control group to assess performance change.</p> <p>Level 3 evaluation will include observing performance; gathering information from participants, managers, and others; or accessing records/artifacts such as performance data, error data, customer satisfaction information, etc.</p>

Level	Objectives	Tools to be Used
Level 4: Results	<p>Did the change in behaviour positively affect the organization?</p> <ol style="list-style-type: none"> 1. Measurement of increased productivity, market share, overall sales, turnover, profitability, quality, savings, etc 2. Measurement of decreased costs, downtime, errors, waste, accidents, absenteeism, employee retention, etc. 	<p>Work with company management -</p> <ul style="list-style-type: none"> > To identify -- before the training -- what performance measures would be important and credible. > Determine what data would point to business success as a result of the training. Determine how best to collect the data (without excessive administrative work). > Determine what other factors are important to the desired improved business performance.
Level 5: ROI	<p>What was the Return on Investment in the Training?</p> <ol style="list-style-type: none"> 1. Isolate the effects of the training 2. Capture the costs of the training 3. Convert Output data to monetary values 4. Calculate the ROI 5. Identify Intangible results 	<p>Use some of the following methods as appropriate: use of control groups, trend line analysis, forecasting methods, end user impact estimates, management impact estimates, customer input, other influences, cost analysis.</p>

Part 2 - Evaluation Tools and Job Aids

Section 2 - Baseline Data

Section 1 - General Information

Name of Company

Address

Telephone No

Fax No

Website

Name of Network

Description of Product/Service

Year of establishment

No of employees (full-time)

Ownership (Irish/Overseas etc)

Name of Managing Director/CEO

Name of Company Representative (1)

Job Title

E Mail

Direct Line

Mobile

Name of Second Person to Receive Training (2)

Job Title

E Mail

Direct Line

Mobile

Section 2 - Training Activity

Total annual payroll in 2003

Total spent on training in 2003

No of Employees who received training in 2003

Estimate of total hours of formal training received by all employees in 2003.

Section 3 - Evaluation Activity

Extent of previous evaluation of training (level, no of programmes evaluated, etc)

Results (if available) of previous training evaluation(s)

Part 2 - Evaluation Tools and Job Aids

Section 3 - Sample Questionnaires

Form S1 - Training Course Evaluation**Trainee Name (the use of anonymous questionnaires is recommended)**Course Title _____ Code _____
Date _____

Please respond to each question by circling one of the numbers on the five point scale.

A five indicates that you strongly agree with the question, while a one indicates that you strongly disagree.

- | | |
|---|--|
| 1. I Understood the course objectives well | 5 4 3 2 1 |
| 2. The objectives of the course as I understand them were met | 5 4 3 2 1 |
| 3. The information was clearly presented | 5 4 3 2 1 |
| 4. There was enough time for the training | 5 4 3 2 1 |
| 5. The information given was clear and easy to follow | 5 4 3 2 1 |
| 6. The information was complete | 5 4 3 2 1 |
| 7. The trainer helped me to learn | 5 4 3 2 1 |
| 8. My questions were answered in a way that helped me to learn | 5 4 3 2 1 |
| 9. I am satisfied that I can apply what I learned to my job | 5 4 3 2 1 |
| 10. The location/venue was suitable | 5 4 3 2 1 |
| 11. The timing was suitable | 5 4 3 2 1 |
| 12. The training materials (manuals, etc) were adequate | 5 4 3 2 1 |
| 13. The pre-course information was adequate | 5 4 3 2 1 |
| 14. Overall the training was beneficial to me | 5 4 3 2 1 |
| 15. I was referred to this course by a colleague who had previously attended it | <input type="checkbox"/> yes <input type="checkbox"/> no |
| 16. Please list any suggestions or comments below: | |

Part 2 - Evaluation Tools and Job Aids

Section 3 - Sample Questionnaires (cont'd)

Form S2 - Training Course Evaluation at 4 Weeks

Trainee Name (the use of anonymous questionnaires is recommended)

Course Title
Date

Code

Please respond to each question by circling one of the numbers on the five point scale.

A five indicates that you strongly agree with the question, while a one indicates that you strongly disagree.

- | | |
|--|--------------------------|
| 1. Overall the training course was beneficial to me | 5 4 3 2 1 |
| 2. I have been able to apply what I learned to my job | 5 4 3 2 1 |
| 3. I have been able to retain most of the skills/knowledge that I learned on the course | 5 4 3 2 1 |
| 4. I have been willing to use most of the skills/knowledge that I learned on the course | 5 4 3 2 1 |
| 5. My work has improved since I attended the course | 5 4 3 2 1 |
| 6. My overall satisfaction with my job has improved since I attended the course | 5 4 3 2 1 |
| 7. I have helped work colleagues to improve their skill/knowledge by what I learned on the course | 5 4 3 2 1 |
| 8. The problems I have encountered trying to apply what I learned to my job were (please mark these in order of importance 1 to 5) | |
| Not enough time | <input type="checkbox"/> |
| Not enough interest from my work colleagues | <input type="checkbox"/> |
| Not enough support from my supervisor | <input type="checkbox"/> |
| No structured way to incorporate what I learned to my job | <input type="checkbox"/> |
| The course was not directly relevant to the job I do | <input type="checkbox"/> |

Form S3(a) - Training Course Evaluation

Supervisor Evaluation 4 Weeks

Trainee Name

Supervisor Name

Course Title

Code

Date

Please respond to each question by circling one of the numbers on the five point scale.

A five indicates that you strongly agree with the question, while a one indicates that you strongly disagree.

- | | | | | | |
|--|---|---|---|---|---|
| 1. The trainee's skill/knowledge has improved as a result of attendance at the training course | 5 | 4 | 3 | 2 | 1 |
| 2. The trainee has been willing to use the skills/knowledge learned on the course | 5 | 4 | 3 | 2 | 1 |
| 3. There has been a measurable improvement in the job performance of the trainee since attending the course | 5 | 4 | 3 | 2 | 1 |
| 4. The trainee has helped work colleagues to improve their skill/knowledge from what was learned on the course | 5 | 4 | 3 | 2 | 1 |
| 5. Overall the training was beneficial to the trainee | 5 | 4 | 3 | 2 | 1 |
| 6. The training was good value for the company | 5 | 4 | 3 | 2 | 1 |
| 7. Please list any suggestions or comments below: | | | | | |

Part 2 - Evaluation Tools and Job Aids

Section 3 - Sample Questionnaires (cont'd)

Form S3(b) - Training Course Evaluation**Supervisor Evaluation at end of evaluation period**

Trainee Name

Supervisor Name

Course Title
Date

Code

Please respond to each question by circling one of the numbers on the five point scale.

A five indicates that you strongly agree with the question, while a one indicates that you strongly disagree.

- | | |
|--|-----------|
| 1. The trainee's skill/knowledge has improved as a result of attendance at the training course | 5 4 3 2 1 |
| 2. The trainee has been willing to use the skills/knowledge learned on the course | 5 4 3 2 1 |
| 3. There has been a measurable improvement in the job performance of the trainee since attending the course | 5 4 3 2 1 |
| 4. The trainee has helped work colleagues to improve their skill/knowledge from what was learned on the course | 5 4 3 2 1 |
| 5. Overall the training was beneficial to the trainee | 5 4 3 2 1 |
| 6. The training was good value for the company | 5 4 3 2 1 |
| 7. Number of additional employees who were trained (cross-trained) by those who have previously attended the training, and their change in skill/ behaviour/performance. | |
| 8. Number of employees who were referred to participate in this or similar training by the trainee since training was completed. | |
| 9. Please list any suggestions or comments below: | |

Part 2 - Evaluation Tools and Job Aids

Section 3 - Sample Questionnaires (cont'd)

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Samples of Other Questionnaires that can be used in Evaluation**Combined Level 1-2-3 Questionnaire**

Level 1 (questions 1-6) and 2 (questions 7-8) (and part of 3 - question 9-10) - Reaction, Learning and intent to Apply

Course Title _____ Code _____
Date _____

Please respond to each question by circling one of the numbers on the five point scale.

A five indicates that you strongly agree with the question, while a one indicates that you strongly disagree.

- | | |
|--|-----------|
| 1. I Understood the course objectives well | 5 4 3 2 1 |
| 2. The objectives of the course as I understand them were met | 5 4 3 2 1 |
| 3. There was enough time for the training | 5 4 3 2 1 |
| 4. The information given was clear and easy to follow | 5 4 3 2 1 |
| 5. The trainer helped me to learn | 5 4 3 2 1 |
| 6. Overall the training was beneficial to me | 5 4 3 2 1 |
| 7. I learned new skills/knowledge from this training | 5 4 3 2 1 |
| 8. Rate your INCREASE in skill level or knowledge of the training content before versus after the training (0% is no increase and 100% is a very significant increase) | |
| <input type="checkbox"/> 0% <input type="checkbox"/> 10% <input type="checkbox"/> 20% <input type="checkbox"/> 30% <input type="checkbox"/> 40% <input type="checkbox"/> 50% <input type="checkbox"/> 60% <input type="checkbox"/> 70% <input type="checkbox"/> 80% <input type="checkbox"/> 90% <input type="checkbox"/> 100% | |
| 9. What I learned is directly applicable to my job | 5 4 3 2 1 |
| 10. I intend to apply what I learned to my job | 5 4 3 2 1 |
| 11. Please list any suggestions or comments below: | |

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