

Training Needs Analysis (TNA) Foundation

Overview

This course is designed to provide the delegate with a high level of understanding of the Training Needs Analysis (TNA) process coupled with a sound knowledge of the underlying principles. The fundamental principles are established and then built upon using a combination of advanced presentation techniques, informal delegate instructor interaction and formal scripted syndicate and individual exercises. The course begins by defining the aims of TNA. The subsequent modules address the phases of the TNA, the products - "deliverables"- the processes and analysis required to be carried out.

The course can be tailored to meet the needs of the individual customer where the exercises and products can be project specific.

Target Audience

The course is aimed primarily at TNA Practitioners and / or Managers who require a high level of understanding of the potential, the processes and the problems associated with TNA. The course is also suitable for members of support disciplines which have to interface with a TNA programme. The course will act as a comprehensive introduction to TNA and form a sound foundation upon which future development can be based.

Objectives and Utility

To introduce the fundamental concepts that are a pre-requisite to a genuine understanding of TNA. To relate relevant TNA standards to these concepts in order to facilitate the effective application of the standards. The delegate will understand each of the TNA tasks. To give the delegate some practical experience of the major analytical techniques used in the TNA process. To understand the key management issues as they appertain to TNA, in particular the planning process, the need for an TNA strategy and the requirement to tailor the TNA process.

It is the aim of this course to present TNA concepts in a simple logical manner and to dispel any misconceptions. The course will enable the organisation to increase their TNA effectiveness. The effective application of TNA will result in improved training cost effectiveness and will result in a quality improvement, to both products and service delivery, whilst providing a detailed and logical audit trail supporting all training decisions.

The Training Process

The course begins by establishing the need for training and from this a logical analytical approach to defining training requirements (i.e. TNA). The TNA process is then addressed, at each stage the relevant theory is presented and discussed; this is then consolidated through a series of practical exercises. This approach ensures that the delegate has a sound understanding of the concepts and the issues associated with TNA. Because the approach is logical and structured it aids recall and understanding. Relevant TNA standards are related to the theory and therefore, the delegate develops the ability to make a critical appraisal of the contents and the requirements of relevant standards.

Training Needs Analysis (TNA) Foundation

Course Programme

Day 01 - AM

091-P TNA - Introduction

TNA is the identification of training requirements and the most cost effective (the optimum training solution within the available funds) means of meeting those requirements.

A TNA is used where major new developments in policy, legislation, equipment or procedures are likely to impact upon the current training requirement.

This module addresses the following questions:

What is it?
Why is it Done?
What are its aims?
Who carries it out?

The module emphasises the following areas:

The Audit Trail.
Definitions of the Training Plan and Training Implementation Plan.
The source and responsibilities for the supply of documentation and information (Target Audience Descriptions, Training Policy and Sources).

The delegate will know where TNA fits into a project with respect to:

Timing in the Acquisition Process.
Influence of Final Design.

The TNA Link with the Systems Approach to Training (SAT) will be explored and discussed.

092-T An Introduction to Systems and Systems Engineering

The concept of Systems Engineering is introduced, and Support Requirements are defined in the context of the Systems Engineering process.

The aims of the Systems Engineering process are defined. This leads to an expansion of the need for and the role of Logistic Support Analysis (LSA). The aims of LSA and its place in the Systems Engineering process are explored.

The "Generic Systems Engineering" process is introduced and related to the concept of system Life Cycle Phases as a mechanism for controlling a major system development programme and for managing risk. The concept of Life Cycle phases is related to the UK MoD acquisition process and the acquisition phases are defined in terms of their aims processes and products.

Day 01 - PM

092-P TNA Phase One - The Scoping Study

Phase 1 of the TNA, the Scoping Study outlines the top level training requirement; identifies constraints, assumptions and potential risks. It also provides the Terms of Reference (ToR) for the conduct of Phase 2 of the TNA process.

This module discusses the requirements of the TNA Scoping Study Report which comprises:

1. Functional Analysis of the Equipment.
2. TNA status statement.
3. Constraints e.g. current training policies.
4. Assumptions which will affect training decisions.
5. Target Audience Descriptions.
6. Recommendations of potential training Systems to be investigated by the phase 2 TNA.

The Scoping Study report forms Deliverable 1 of the TNA.
Production of TArget Audience DEscriptors (TADs) - Tactics, Techniques and Procedures (TTP).

Day 02 - AM

093-P TNA Phase 2 - TNA Development - Pt 1 Operational Task Analysis (OTA)

This module covers Operational Task Analysis (OTA). The Operational Task Analysis (OTA) Report, covers the process of refining the definition of the operational training requirement to produce a performance based task inventory of the jobs affected by the introduction into service of the new equipment / procedure.

The report is delivered to the customer for comment, a timely turn-round time and endorsement ensures compliance with the master project plan, and enables completion of project training activities by the Ready For Training Date (RFTD).

The analysis requires visits to Subject Matter Experts (SMEs) to conduct interviews and to gather relevant data. To make the process simpler, and to reduce the pressure on already busy SME, a questionnaire and agenda can be forwarded prior to any visit. This process ensures that the end-users, and those carrying out other studies including the Safety Case and production of the Technical Documentation, are involved in a "partnership in production" of the training and associated training requirements.

The production of the Operational Task Analysis (OTA) report identifies:

The current in-service jobs, duties and tasks affected by the introduction into service of the equipment (Identified in the Scoping Study).

An Update to the Operational Task Statement (OTS) produced in the TNA Scoping Study that includes, at a minimum:

- List of duties and tasks involved with each job.
- Associated Human Computer Interface (HCI) assumptions.
- The operational conditions under which each task is to be performed.
- The operational standard to which each task must be performed.
- A Training Priority Category (TPC) for each task based on a Difficulty, Importance and Frequency (DIF) assessment.
- The OTA report forms Deliverable 1 of Phase 2 of the TNA.

This module discusses the procedure, methods and difficulties of carrying out this phase of TNA.

Exercises performing the DIF, TPC and production of the OTS are utilised during this module.

Day 02 - PM

094-P TNA Phase 2 - TNA Development - Pt 2 Training Gap Analysis (TGA)

This module addresses Training Gap Analysis (TGA). The Training Gap Analysis (TGA) Report covers the analysis conducted to define the gap between the performance achieved by current training regimes and the requirement defined in the Operational Performance Statements, contained in the Operational Task Analysis report. The gap is to be defined in the form of Training Objectives required to bridge the gap.

The report is delivered to the customer for comment, a timely turn round time and endorsement ensures compliance with the master project plan, and enables completion of project training activities by the Ready For Training Date (RFTD).

For each Job Holder identified in the OTA, the Training Gap Analysis (TGA) report identifies:

The defined gap between current operational performance and those required to operate the new equipment or procedure.

Any additional training requirement, of each jobholder affected, in terms of Knowledge, Skills and Attitude (KSA).

Justification for any recommendation not to provide additional training (articulation of the do nothing option).

A set of Training Objectives (TO), with each TO identifying:

- The task to be performed.
- The Training Priority Category of the task.
- The conditions under which the task will be performed during training.
- The standards to which the task must be performed during training.
- Addressing the "do nothing option" may provide the justification for training need.

The TGA report forms Deliverable 2 of Phase 2 of the TNA.

This module takes the delegate through the process of the TGA and the production of the Training Objectives.

Day 03 - AM

205-P Fidelity Analysis

Fidelity is the degree to which aspects of the real world are represented by the training system. It is generally broken down into three categories:

1. Physical – spatial aspects, tactile aspects and appearance.
2. Functional – format, content and response.
3. Environmental – sound, motion and ambience.

The Fidelity Analysis is undertaken as part of the Training Gap Analysis (TGA) and/or the Training Options Analysis (TOA). Its aims are to define the fidelity requirements for a training aid and assess the training systems against this requirement. The fidelity categories are considered separately as it is not necessarily the case that the same level of fidelity is required across all the aspects of the training requirement. This module considers the process of qualifying and quantifying levels of fidelity by allocating scores to each of the facets.

Some standards are not clear as to how the fidelity aspect of the TNA should be completed but Aspire has come up with an innovative approach which allows the fidelity analysis to produce a "score" that enables the fidelity of a training system to be quantified.

095-P TNA Phase 2 - TNA Development - Pt 3 Training Options Analysis (TOA)

This module takes the delegate through the requirements of the Training Options Analysis (TOA) Report.

The TOA Report describes the options available for the delivery of training to meet the Training Objectives defined in the Training Gap Analysis Report. The report is then delivered to the customer for comment.

The production of the Training Options Analysis (TOA) report identifies the TOA for each Job Holder. It also identifies and describes alternative training options and media which partially or fully meet the training requirement as defined by the TOs specified in the TGA.

It evaluates each of the alternative options as to their training effectiveness (Measure of Training Effectiveness [MoTE]) and identifies any training penalties associated with each option. It also quantifies the 'On the Job Training' (OJT) implications of each option.

From there a Cost Benefit Analysis of alternative options is carried out, based on the 'Broad Order Costs' for each option, and then recommends the most cost effective training solution. A comparison between the cost and training effectiveness is used to discount or recommend any training option.

The TOA report forms Deliverable 3 of Phase 2 of the TNA.

The delegate is taken through a MOTE and CBA scenario to enable him to complete a TOA Report.

Examples of a TOA is presented to the delegate.

Day 04 - AM

207-P Course Design

The courses are produced in accordance with the Systems Approach to Training (SAT) and as a result of the comprehensive TNA from which individual Training Objectives are provided to the course designer.

A course is more than a collection of topics slotted into a calendar. If our goal is student learning, the various parts that make up the course must work together to that end.

The course design process grows out of three basic questions:

- What do I want students to take away from this course?
- How would I assess them to find out if they know / can do those things?
- What learning activities should they engage in to help them do well on those assessments?

Ideally, learning can be considered a cyclic process where learning is gained through an individual actively experiencing some event, analysing and reflecting on that experience, drawing out what happened and why, and finally testing his or her 'theories' of what happened or what should be done next time. This leads to an appreciation that people have different preferred strategies and styles of learning and that what suits some, will not suit others. This will affect how training is delivered and therefore courses designed. But we do not live in an ideal world and have constraints placed upon us.

This module considers all of the nuances of course design and takes the candidate through a 3 stage, twelve point process of course design.

208-P Training Syllabus, Instructional Specification and Course Training Plan CTP

The courses are produced as a result of the comprehensive TNA. Objectives of the course must be written in such a way to ensure the Course Designer is in no doubt as what to produce.

This module takes the delegate through that process and includes the following:

Creation of a Syllabus, identifying its Target Audience and purpose and typical contents.
Production of the Instructional Specification once again identifying the Target Audience and purpose and typical contents.

These documents are amended as part of the Systems Approach to Training (SAT) both during course development and as a result of trainee and instructor feedback.

The Training Objectives and Enabling Objectives are produced as a result of the TNA and articulated in terms of Performance Conditions and Standards. They are included in this document, along with the allocation of time, resources and equipment requirements for the course.

The delegate will be given a typical Syllabus and Instructional Specification and examples of objectives. He / she will then be asked to produce examples of "Hard" and "Soft" Objectives; estimate training time and maximum and minimum class sizes. The Syllabus and Instructional Specification, together, lead to the production of the Course Training Plan (CTP).

This module takes the delegate through that process and includes the following:

The CTP is the document that stores all of the training design process, along with the management details pertaining to the course. It is the control document for the course and provides an audit trail for amendments made to the course. Once handed over the CTP becomes the property of the training organization and is used to provide Instructors with objectives, précis, exercises and support material for the course and each lesson.

The CTP is a working document, it is flexible and must, as a result of equipment or doctrinal changes, be regularly updated. It standardises the training for a course and prevents the course from suffering according to the vagaries of individual Instructors. Strict configuration control procedures will be required to ensure that the content of the training courses is maintained in line with design and procedural changes.

The CTP is amended during course development and as a result of Trainee and Instructor feedback. The CTP contains a number of documents and lists of requirements that individually and collectively form the training course in terms of administration and delivery of the training.

This module presents the CTP as a logical progression of the previous analyses.

Day 04 - PM

209-P Examination and Assessment Methods

Each learning situation consists of unique and often complex experiences; any testing method must have the greatest immediate relevance and also be appropriate to the subject being learnt. This module highlights the different methods but does not stipulate or recommend any particular method.

096-P TNA Phase 2 - TNA Development - Pt 4 Final Report

The TNA Final report includes the methodology and findings of the TNA and recommended training implementation program.

The report includes:

Executive Summary, which is a summary description of the complete TNA activity and recommendations. The main outcomes, facts, assumptions and constraints and the supporting arguments presented to provide the basis for the recommendations provided.

Introduction: Describing the background of the procurement process for the equipment / procedure, it's intended use and any relevant supporting information.

Constraints: Stating the constraints under which the TNA was conducted, including both constraints imposed by the customer and those encountered during TNA activity including those provided within the TNA Scoping Study report.

A list of all assumptions used in the conduct of the TNA.

A description of the methods and data sources used for TNA. In particular, the means by which training media and methods, recommended for the achievement of devised Training Objectives.

A list of the Operational Task Statements for each jobholder as derived from the Operational Task Analysis Report.

A set of Training Objectives for each job holder as derived from the Training Gap Analysis Report.

Recommended Training Solution.

The results of the Training Options Analysis report is presented for each jobholder identified in the Operational Task Analysis.

A Cost Benefit Analysis of each proposed option, taking into account broad order costs of capital, manpower, infrastructure and support costs.

A summary of the contents of the Training Implementation Plan, which describes the activities to be completed in order to meet the customers Ready for Training Date (RFTD).

A description of the Post Project Evaluation (PPE) strategy to be adopted.

A summary of the outcomes of the TNA process leading to the recommended training solutions.

The final recommended solution, for each post holder identified, in terms of strategy, media, delivery and Government Furnished Resource (GFR) requirement.

The TNA Final report forms Deliverable 4 of Phase 2 of the TNA

Day 05 - AM

097-P TNA Phase 3 - Post Project Evaluation

This module addresses the quality Criteria for the assessment of TNA Deliverables.

The quality criteria for the assessment of the TNA deliverables are clearly stated in the Scoping Study and relevant TNA standards, and are applied to all of the deliverables.

Deliverables are considered to have been successfully completed once the reports have been through the review, comment and amendment procedure and have been endorsed by the customer.

This module takes the delegate through that process.

Day 05 - PM

099-P TNA Future Enhancements and Other Processes

This module discusses the future enhancements to the TNA process including software systems and the integration of TNA with Systems Engineering, Ergonomics (Human Factors Integration) and Integrated Logistics Support (ILS).

A Project 'Tool Box' is also discussed as are commercial software packages and bespoke software for the completion of TNA.