automotive
industrial partnership

Learning Analysis, Design and Development Framework

Contents

The Learning Analysis, Design and Development Framework

This is the first in a series of four documents containing guidance notes that provide information on how the Learning Analysis, Design and Development Framework (LDF) can assist in the development of effective, systematically derived learning materials. Subject to further industry collaboration and pilot testing, it is a tool that will enable the user to:

- Accurately identify learning needs, particularly targeting critical skills shortages.
- Detail accurately learning objectives and outcomes.
- Meet industry standards gaining industry accreditation.
- Deliver consistent high quality learning solutions.

This framework has been developed via a systematic approach to training, utilising the instructional design methodology Analysis, Design, Develop, Implement, and Evaluate (ADDIE). This approach guarantees quality assurance in terms of consistency, efficiency and management control. By ensuring competency requirements are established and levels are reached and maintained, the workforce can gain the right level of knowledge, skills and attitudes required by their employer and industry.

Although the increased control and accountability features embedded within this process provide the capability of applying standard quality assurance procedures and processes at every stage of the learning cycle, an industry specific regulator may still require a certain number of examinations and forms of assessment to license individuals within some positions. However, the requirement for the training process to conform to a company and/or organisational quality assurance programme provides management and the regulator with far greater confidence in the qualifications and competence of personnel, than that provided by a purely examination driven assessment.

Knowledge, Skills and Attitudes

Learning content is developed for the learner to cover their:
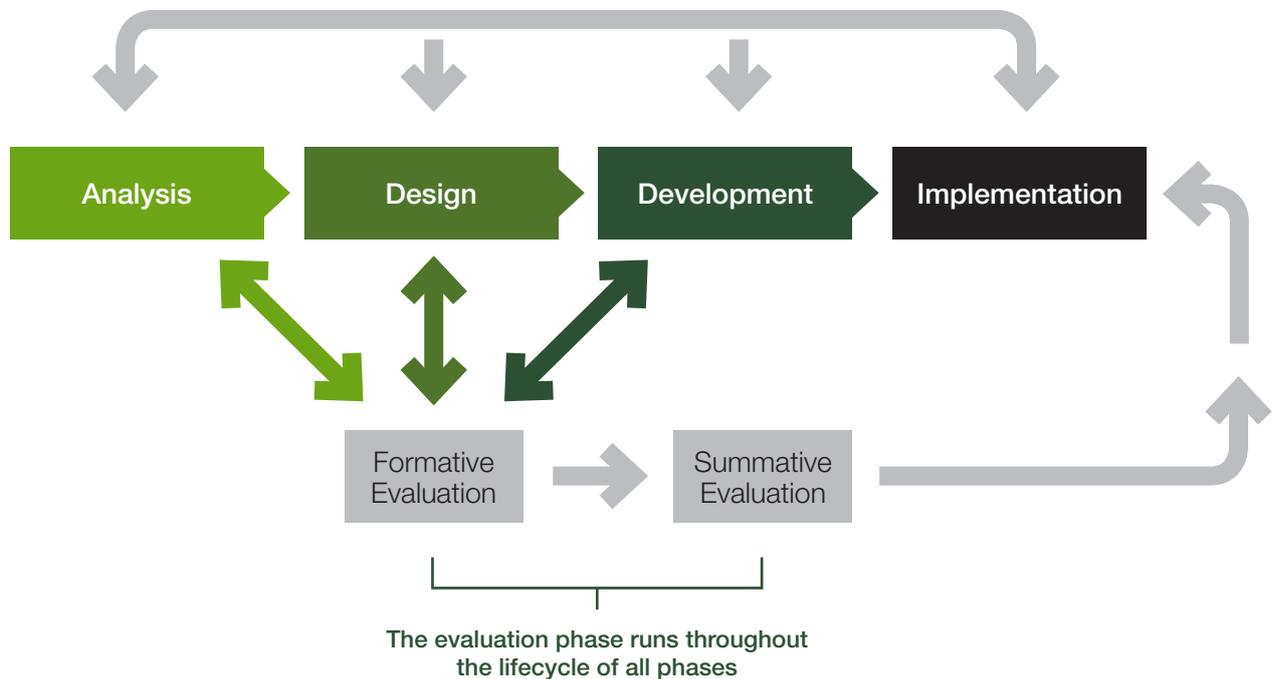
- **Knowledge** - of a subject matter ie "thinking head"
- **Skills** - how they apply their knowledge in the working environment ie "doing hands"
- **Attitude** - behaviour required to approach and undertake the given task ie "feeling heart"

High Level Overview of the Learning & Development Framework via a Systematic Approach to Training

Input:

Identifying training needs and competency criteria required to develop the knowledge, skills and attributes to perform a particular job.	Competencies are converted into training objectives and then organised into a plan.	This phase will comprise of the preparation of all training materials so that the training objectives can be achieved.	Training is conducted utilising all the training materials that have been developed.

Feedback Loop

Analysis	Design	Development	Implementation

Formative Evaluation → Summative Evaluation

The evaluation phase runs throughout the lifecycle of all phases

Phases in the LDF:

Key	Part	Phase Description
	A	Analysis and defining if the automotive industry has a **learning need**
	B	Creation of a **learning design** specification that is approved by the industry
	C	Development of **learning solutions** that can be accredited by the Industry and delivered by approved providers

Governance of the Learning Analysis, Design and Development Framework

The LDF has been developed for the automotive industry against the backdrop of a rapidly changing operational environment. As each learning intervention evolves via the phases within each learning lifecycle, there will be a requirement for a clear linkage mechanism between industry and individual business requirements, to create a clear concise path to meet the required critical skills shortage.

Automotive Industrial Partnership

The LDF is a solution developed by the Automotive Industrial Partnership to encourage collaboration across the automotive industry, embed regulation and encourage industry sharing.

The Automotive Industrial Partnership has undertaken significant research to create an industry job framework. From this, critical skills shortages have been identified nationally based on both current and future needs. This data highlights the need for the automotive industry to collaborate in developing targeted learning solutions, potentially using the LDF framework to support this.

If there is a consensus view across the automotive industry that a learning solution is currently in existence and therefore requires industry accreditation, or new materials need to be created, it is recommended that a learning design team is established. (A stakeholder group of industry representatives who will oversee the design and development process).

It is recognised that member companies of the Automotive Industrial Partnership, through the natural delivery of their business operations, will also identify competency gaps due to new product launches, changes in technology and subsequent process changes. In order to cater for this the following guidance is provided.

Establish Team Parameters and Scope

It is recommended that the Automotive Industrial Partnership ensures that the needs of the industry are met by focusing on critical skills shortages. Consideration must be given to the following classification as detailed in the industry skills needs research report:

- **Critical Skills Shortage** – impacting the business/industry now and affecting outputs and achievements.
- **Severe Skill Shortage** – skills need to be addressed in the next 6-12 months.
- **High Skill Shortage** – will start to impact the business if skills not addressed in the next 12 months.
- **Future Skills Shortage** – will start to impact the business greater than 12 months if not addressed.

Stakeholder Management

A critical component to the successful delivery of any project. (A stakeholder is any individual, group or organisation that can affect and or be affected by any element in the project).

Effective stakeholder management creates positive relationships through the appropriate management of their expectations and agreed objectives. It is a process and control that must be established at the onset of a project; it is planned and guided by underlying principles. The principles comprise of:

- **Identify** your stakeholders and understand their "wants and needs."
- **Analyse** the stakeholders based on their position, influence etc.
- **Matrix** stakeholders (visual).
- **Engage** with the stakeholders, by developing and implementing an effective communication plan as a result of the stakeholder analysis.
- **Evaluate** continually to ensure the effectiveness of stakeholder communication, update and review with the team to ensure full stakeholder cooperation, and relevant changes are dealt effectively.

Subject Matter Experts

A Subject Matter Expert (SME) brings together all the necessary expertise relating to the potential subject of the training. Identified at the beginning of the project, they are managed throughout the project lifecycle as stakeholders. The expertise required from the SME will comprise of the following:

- **Technical**
  - Product design and safety guidelines
  - Job specification
  - Working environment specific design and operation
  - Methods used in the performance of tasks and under what constraints (if any) they are performed
  - Operational experience feedback
  - Learning needs resulting from procedural changes and product modifications

- **Management Systems and Human Factors**
  - Communication, leadership and other human factor knowledge, skills and attitudes (KSAs) required of the job incumbent
  - Range of experience and education of the potential learners
  - Legal and other mandatory requirements of the job incumbent
  - Safety culture
  - Management systems and environments organisation
  - Use of procedure ie operating instructions

- **Training**
  - Knowledge of the learning analysis, design and development lifecycle
  - Knowledge of existing learning materials

It is also important to note that as each project evolves other SMEs may be identified, especially as an output of the analysis phase.

Project Management

Throughout the lifecycle of the LDF activities, it will be critical to the success of each project to appoint the required level of resources consisting of:

- Human
- Financial
- Administrative
- Technical Support

This is because every project is a unique, transient endeavour undertaken to achieve planned objectives, which could be defined in terms of outputs, outcomes and/or benefits to the business. Historically projects are deemed to be a success if they achieve the objectives according to acceptance criteria, within an agreed timescale and budget.

Evaluation

It is important that the output of the LDF is consistently evaluated.   This will be achieved via formative evaluation, throughout the lifecycle of the analysis, design and development phases to ensure that changes to materials are made "in flight" and fed back as depicted in the diagram on page 4. This will enable modifications and process improvements to be made prior to formal roll out, at which point evaluation will evolve to a summative evaluation model.

Simple Formative and Summative Depiction

The chef tastes the soup (formative evaluation), the customer dines on the soup (summative evaluation).

Content Shelf Life

It is essential that the shelf life of the content of each learning solution is established and follows a customised content mix. Technical content will have more of a half-life than a shelf life as the content may become irrelevant or unusable as the subject matter being taught evolves technically, the product updates and how it is applied in the workplace changes. The percentage mix of categories will be established following the job task analysis, but as a guideline should consist of: core competencies, compliance, major technology upgrades and product updates.

Depiction of Content Shelf Life
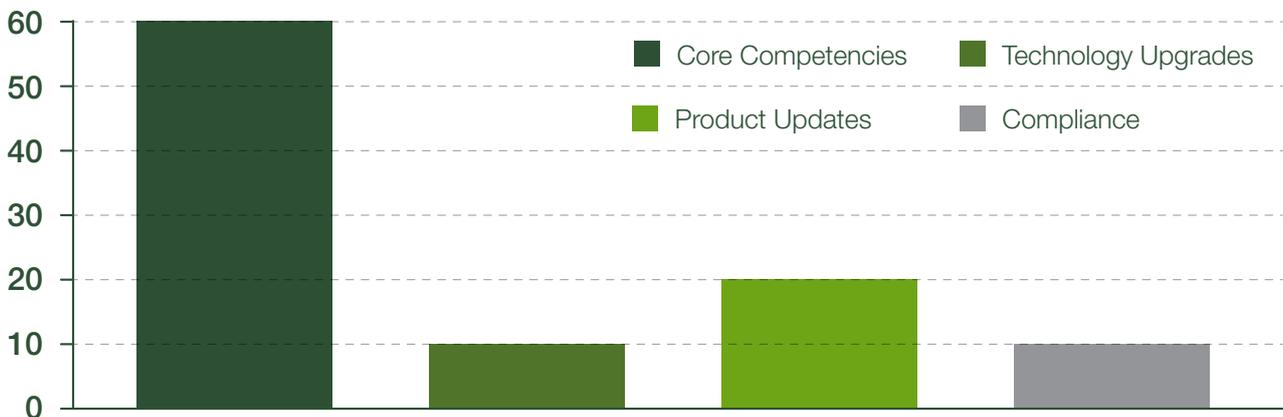
Time periods and/or cycles will be established or known within the categories. For example, certain compliance updates or standards may be updated every so many years or months. At no time should they default without continuous evaluation of the content being undertaken in parallel. Shelf and half-life is essential to ensure content and core competencies remain stable and up to date.

Overview of the Inputs and Outputs of the Analysis, Design & Development Phases
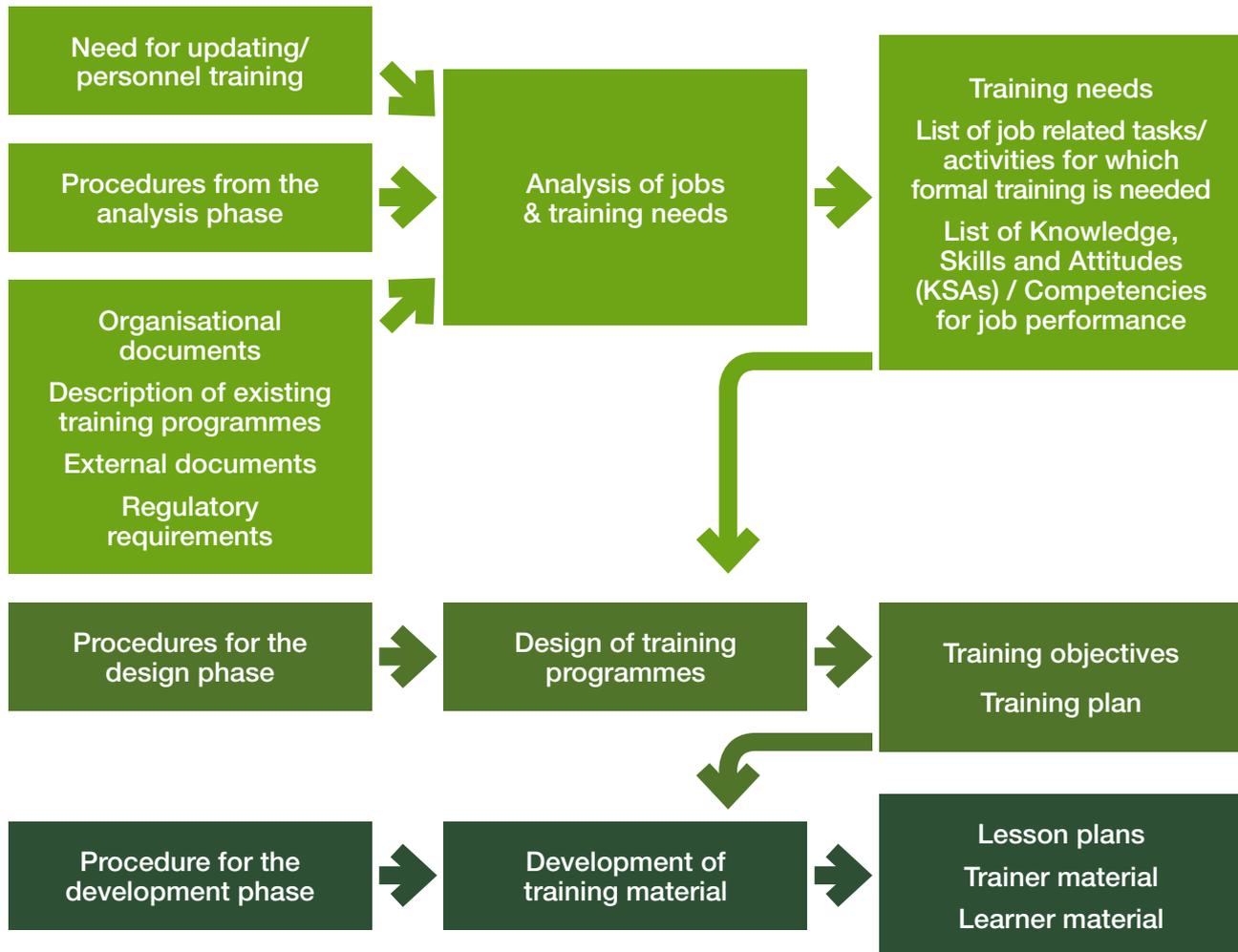
The other guidance notes in this series highlight the various phases in the LDF to create learning solutions that develop competent personnel.

Reference Materials

Material	Author/ Source
Taxonomy for Learning, Teaching and Assessing	Lorin W. Anderson and David R. Krathwohl
Teaching Training and Learning a Practical Guide	Ian Reece and Stephen Walker
Employers' Views of the Jobs and Skills Required for the UK Automotive Industry February 2016	Sara Bettsworth and Phil Davies

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