



GUIDE TO INSTRUCTIONAL DESIGN

Disclaimer

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A short guide to Instructional Design

Instructional Design can be defined as the practice of arranging media (content, for example: audio, video, text and images) to help learners, knowledge communicators and champions (teachers, lecturers and subject matter experts) to transfer knowledge most effectively. The process in general consists of:

- > Understanding / discovering the current state of learner's level of understanding of a particular area
- > Assuring the definition of the end goal of instruction, and
- > Developing media-based 'intervention' or activity to assist in the transition of knowledge to the learner.

In an ideal situation of planning the entire process is supported by pedagogically proven or piloted theories of learning. This activity may occur in an exclusive learner, instructor led, teacher-led or collaborative / community-based settings. Interestingly, the outcome of this instruction may be directly observable and scientifically measured or completely hidden and assumed.

The roots or heritage of instructional design is based on cognitive and behavioural psychology. It is currently an unregulated area of eLearning development.

Instructional Design and eLearning

NB Not all media can deliver instructional methods, for example, with paper / text based learner material its animation capabilities are limited.

Three instructional methods are unique to eLearning:

1. Practice with automated customised feedback
2. Integration of collaborative learning environments with self study
3. The use of simulation of scenarios to accelerate expertise

eLearning Pitfalls

Pitfall	Impact/ Result
Failure to define job knowledge and skills	Lessons developed do not build knowledge that can be both easily adapted to a real-world situation and transferable to the learners current role.
Failure to accommodate learning process	Lessons developed overload cognitive processes, therefore learning is disrupted
Attrition	Learners do not complete their instructions

Good eLearning Courseware tips

Based on experience, the following factors can help in developing effective eLearning instructions:

- > Training Goals – Procedure and Process based
- > Learner Differences – Understanding characteristics of the knowledge recipient
- > Training Environment – Considering both technical and cultural variances



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Learning Styles:

Three types of eLearning styles are typically considered when developing eLearning courses.

Instructional Style	Develops lesson that deliver, for example:	Typical use
Receptive: Information Acquisition aka Information view orientated.	Includes content and information with opportunities to practice	Informs Goals
Directive: Response Strengthening aka Answering questions, 'on the fly'	Require frequent responses from learners with immediate feedback	Perform-Procedure Goals
Guided Discovery: Knowledge Construction aka the learner developing a coherent mental representation – guiding performance	Provide job-realistic problems and supporting resources	Perform-Principle Goals

Types of elearning Content and cognitive processes

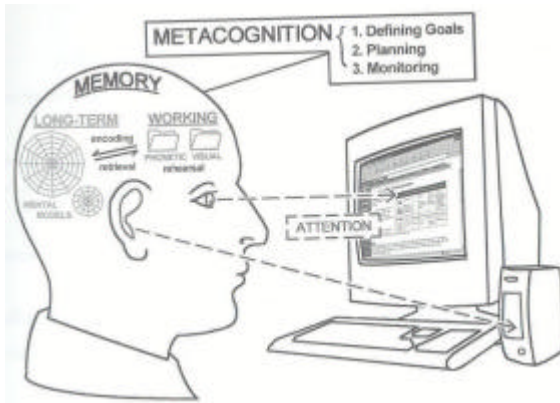
There are 5 types of eLearning content. It is important to consider each in the context of instructional design as it impacts the use / deployment of appropriate media, for example:

Content Type	Definition	Example
Fact	Specific and unique data or instance	The company log-on screen or key induction item
Concept	A category that includes multiple examples	Web page password
Process	A flow of events or activities	Performance appraisal process
Procedure	Tasks performed with step-by-step actions.	How to log-on
Principle	Task performed by adapting guidelines	How to close a sale



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Cognitive processes involved in eLearning include metacognition, i.e: Defining goals, planning and monitoring. Attention from the screen display is mapped to phonetic and visual rehearsals, also in a hope that



Near Vs Far Knowledge Transfer Perform (act of learning) Goals

Based on Instructional design research it has been suggested that there are two types of perform goals, i.e: Procedural – known as near transfer and principle based – known as far transfer.

Procedural-based lessons, for example, teaching a learner to use a software package or access an online system tend to use step-by-step instructions / repeated / identical dialogue. This is also known as '*near transfer*'. Most computer skills training falls into this category

Principle-based lessons, also known as '*far transfer*', are designed to teach tasks that do not have one correct approach or outcome. Thus the situations presented in the associated training may not be exactly the same as the situations that, for example, would materialise in the learners role / job / prospective situation. These tasks require the learner to adapt guidelines to various job / simulations / situations. Typically some element of problem-solving is involved. The learner will need to use judgement in performing these tasks since there is no one right approach for all situations.

this attention is maintained! Long term memory is then encoded and retrieved to create mental models. The following diagram shows the core processes.

Far transfer lessons include soft skill training, supervision, management and personal development courses.

Developing a Score card to measure effective course delivery

The following score card can be applied both to electronic or classroom based course delivery. The FREEDOM approach is weighted in relation to each scenario.

Failure = 10%
Reasoning = 25%
Exploration = 5%
Emotion = 10%
Doing = 25%
Observation = 5%
Motivation = 25%

For example, applied to a instructor (non-electronic) course

F = 1% - related to the knowledge of the instructor
R = 10% - related to homework or assignments set
Ex = 1% - the class may have had 100 attendees but hardly anyone asked questions
Em = 2% - the lecturer provided good supporting stories
D = 0% - as the course consisted entirely of lectures and no practical work
O = 1% - only a few images were used to support the lecture
M = 0% - the wrong reasons to sign-up for the course was revealed.



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For example, applied to an eLearning course

F = 100% - Not acquiring skills would be considered as failing to acquire key skills
R = 100% - Invokes discussion after the course is completed.

Ex = 100% - support provided online

Em = 100% - Failure to acquire skills has impact on organisation and clients

D = 100% - as the course consisted entirely of lectures and no practical work

O = 100% - useful visual images deployed to support situations and experiences

M = 100% - the implication for not attaining knowledge were signed off as accepted

Distributed Development process

The following project organisation is typical for delivering an effective eLearning programme. 5 stages are typically deployed with associated roles:

Analysis

- Learning Executive Sponsor
- Project Manager
- Instructional Designer

Design/Storyboarding

- Project Manager
- Instructional Designer
- Learning Management System
(LMS - if deployed to house and

allocate eLearning
modules) Administrator

Development

- Project Manager
- Instructional Designer
- LMS Administrator
- LMS Developer

Pilot and Implementation

- Project Manager
- Instructional Designer
- LMS Administrator
- LMS Developer

Evaluation

- Learning Executive Sponsor
- Project Manager
- Instructional Designer
- LMS Developer

Summary

This short paper has outlined the key areas of instructional design. Far and near learning approaches should be considered before investment in supporting content is made. Piloting and online support are ideal mechanisms to assure that any eLearning strategy adopted can be measured and successful in delivering effective knowledge transfer to the learner – aligned to business or initially mapped outcomes.