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white paper

The Dokeos e-learning project management guide

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I. Introduction

This guide is the result of a series of meetings with companies HR management teams and training departments and takes the Arcelor Mittal project as an example.

Most of our clients start an e-learning programme to improve flexibility, accessibility and productivity of learning processes. The document defines guidelines for the pilot phase of such kind of projects.

II. Quality management

Some 70% of e-Learning projects fail. Participants give up, competences are not acquired or the project is not financially sustainable. It is, consequently, important, to pay attention to the threats and dangers of such kind of projects. Weakness of learning analysis and design being the most obvious.

Analyse the need for training, the target audience and resources available but also delve into a reasonable understanding of norms and standards at stake : SCORM, W3C, assessment norms and also norms that are internal to the organisation starting the e-learning project : production quality standards, processes normalisation and quality control.

At Arcelor Mittal, the organisation's training project is driven by the necessity to comply with recently introduced quality standards like PALAS and CMMI. The e-Learning pilot was an opportunity to delve into these norms and see how PALAS and CMMI propose their own validation protocols as guidelines for the training scenario, course material and targeted competences.

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III. A competences-oriented approach

If most learning experts recommend that training programmes focus on *competences* (what can participants do) instead of *contents* (what do participants know), this is even more true for e-Learning programmes. Transferring part of your training to web-based sequences leads you to describe the process step by step in terms of activities and tests and you are automatically invited to describe what the test validates in terms of competences.

Classroom training objectives may tolerate that you describe them in terms of : « at the end of the session, participants should know the main quality standards of the organisation » where the same session online in an e-learning programme will lead you to describe how participants will proove in tests that they are able to deal with the rules in terms of :

- associate a universal rule with a particular situation
- define what lies within the scope of the rulen what lies outside it
- compare two results and decide which one complies most with rule X

etc.

One of the most usefull exercises for training managers at start will be to re-describe the course and lessons objectives in terms of actions and measurable behaviours instead of mental states like « know », « understand » or «apply».

Content-oriented description		Competences-oriented description
Know the PALAS rules	»	Be able to list the PALAS rules
Understand the PALAS rules	»	Succeed in a multiple choice about PALAS rules
Apply the PALAS rules to a particular situation	»	Point out mistakes in a bad PALAS application Fill a PALAS form about a particular situation

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The reference to Bloom's taxonomy will help detail the process lesson by lesson and analyse the course in terms of competences following a table that will look more or less like this :

Category	Example and Key Words
Knowledge: Recall data or information.	**Examples**: Recite a policy. Quote prices from memory to a customer. Knows the safety rules. **Keywords**: defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states.
Comprehension: Understand the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.	**Examples**: Rewrites the principles of test writing. Explain in one's own words the steps for performing a complex task. Translates an equation into a computer spreadsheet. **Keywords**: comprehends, converts, defends, distinguishes, estimates, explains, extends, generalizes, gives Examples, infers, interprets, paraphrases, predicts, rewrites, summarizes, translates.
Application: Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the work place.	**Examples**: Use a manual to calculate an employeeís vacation time. Apply laws of statistics to evaluate the reliability of a written test. **Keywords**: applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses.
Analysis: Separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.	**Examples**: Troubleshoot a piece of equipment by using logical deduction. Recognize logical fallacies in reasoning. Gathers information from a department and selects the required tasks for training. **Keywords**: analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates.
Synthesis: Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.	**Examples**: Write a company operations or process manual. Design a machine to perform a specific task. Integrates training from several sources to solve a problem. Revises and process to improve the outcome. **Keywords**: categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes.
Evaluation: Make judgments about the value of ideas or materials.	**Examples**: Select the most effective solution. Hire the most qualified candidate. Explain and justify a new budget. **Keywords**: appraises, compares, concludes, contrasts, criticizes, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarizes, supports.

From Bloom B. S. (1956). *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain.* New York: David McKay Co Inc.

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IV. Instructional design : writing a *storyboard*

E-Learning design starts when the course design team is able to express the competences at stake in terms of activities. The following table (and its example) will help progress from objectives to tools through method, steps (or SCORM objects) and media.

Our example lesson here is taken from the company's internal documentation process. To deliver a development internally, the development team has to provide a documentation called a « Delivery » filling a compulsory template form. The lesson here bears on « How to fill the delivery form? »

One of the advantages of this method is to analyse the lessons learning object by learning object, page per page and media per media. The next step being to determine the needed tools to produce the media.

Objective	Method	Steps (SCOs)	Media	Tools
Fill the delivery form.	Case study and problem based learning.	List PALAS rules	Multimedia presentation of PALAS rules set	Flash video and/or Dokeos web page authoring
Cognitive competences			Multiple choice	Dokeos test tool
Knowledge : list the PALAS rules **Comprehension** : associate particular situations with PALAS rules **Application** : apply PALAS rules to a new situation		See a completed form and proove you understand how it complies with PALAS.	Completed form presentation : video or text.	Flash video and/or Dokeos web page authoring
			Multiple choice	Dokeos test tool
		See a form with PALAS mistakes in it and detect them.	Wrong form presentation : video or text	Flash video and/or Dokeos web page authoring
			Multiple choice	Dokeos test tool
		See a form with blanks and fill them	Incomplete form presentation : video or text	Flash video and/or Dokeos web page authoring
			Fill the blanks test	Dokeos test tool

		Compare two forms and provide expert remarks	Two forms presentation : video or text.	Flash video and/or Dokeos web page authoring
			Multiple choice	Dokeos test tool
		Fill an empty form	Reminder of PALAS rules set as defined in first step.	Flash video and/or Dokeos web page authoring
			Open question based on form template	Dokeos test tool and individual reporting and coaching

V. The 4 C pre-requisites

To get started with an e-Learning project, the organisation should check if it can rely on the four C minimal requirements :

	4 C	Questions	Answers
01	**Connectivity**	Will the IT infrastructure guarantee the project to happen in acceptable conditions	Agreement with IT system managers SCORM compliance W3C web rules compliance bandwidth check loudspeakers check
02	**Competences**	Will we provide the expected and relevant courses, tests, activities and assessment protocol?	e-Learning Cases study Competences analysis Audience analysis Instructional design Multimedia development : buy or do? Coaching interaction deployment

03	**Capability**	Are all the actors of the system able to enter the project	End users tests Trainers training Management agreement and support Budget handling
04	**Culture**	Are all the actors of the system eager to enter the project	Communicate on project internally Detect trainees motivation Provide guarantees to trainers Validate with a certificate Promote collaboration in learning process

VI. Analysis, Design, Development, Interaction

A common practice is to work during the first 6 months on a pilot project so as to get familiar with the e-learning project management methodology and go through all its phases to get familiar with the *Strenghts, Weaknesses, Opportunities and Threats* of e-Learning.

During this phase, the core team should go through the 4 phases of e-Learning project management : **Analysis** (see what we need), **Design** (decide how to do things), **Development** (create courses and associated media), **Interaction** (give courses, coach and assess trainees).

The following mindmap details the phases of the project.

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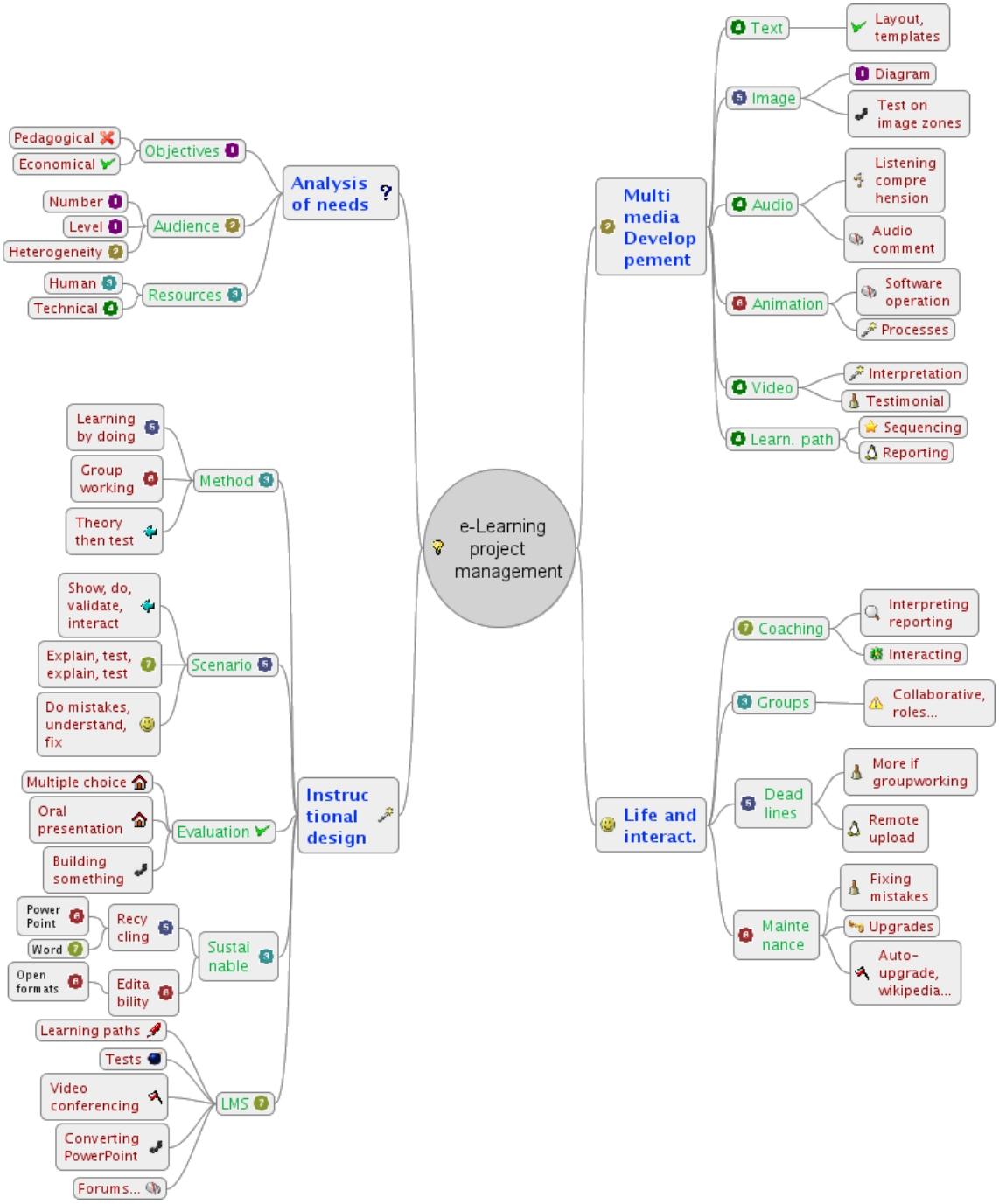

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VII. E-Learning project management dashboard

To manage a large scale e-Learning project, the organisation might want to start by summarising the decisions in a three-levels spreadsheet :

- E-Learning Project sheet in terms of Analysis, Design, Development, Interaction
- Course scenario sheet in terms of Pre-requisites, Week-by week agenda, Assessment protocol and team casting
- Lesson storyboard sheet : SCO by SCO description following analysis of Objectives, Competences and Learning Method.

Download the E-Learning project management dashboard from :

http://www.dokeos.com/doc/DokeosElearningProjectDashboard.xls

VIII. Multimedia authoring tools

To analyse, design, develop, give and follow e-courses, the organisation will need a series of IT software. The Dokeos LMS or another SCORM compliant LMS might be the base. It will be completed in particular with a series of multimedia authoring tools. Here is a first list of tools that you may want to choose from.

Dokeos promotes the use of open source software when possible for more flexibility, sustainability and a quicker deployment.

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Task	Closed	Open and/or free	Online with Dokeos
Project management Organizing the training team	● Ms-Excel ● Ms-Project ● Outlook ● MindManager	● OpenOffice Calc ● Flyspray ● Dokeos ● FreeMind	Many organizations use Dokeos to build courses collaboratively. They remove discussions and drafts when course starts.
Image manipulation Resizing and manipulating photos and screenshots	 Photoshop	 The GIMP	Import images in the Documents tool in .gif, .jpg or .png format.
Audio manipulation Recording and editing .mp3 audio	/	 Audacity	Import audio in the Documents tool in .mp3 format. 64 Kbps is a good compression rate.
Desktop animation Creating software demonstrations and animated diagrams.	 Captivate	 Wink	Import animations in the Documents tool in HTML and Flash (.swf) format.
Learning path authoring Creating course sequences	● Articulate ● Lectora ● e-Doceo e-Learning Maker	● Dokeos ● Reload Editor	Create Learning paths directly into Dokeos LMS learning path tool or import SCORM packages there ass ZIP files.

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IX. Pilot project agenda

The HR or training team will have to agree on a detailed agenda. Here are some typical items for the agenda and a possible time organisation.

Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Select LMS system	Select one course for pilot	Online coaching trainers training	Webdesign meeting	Coaches meeting	End users tests
Brainstorming	Cases studies	Active pedagogy training	Webdesign development	Webdesign development	Webdesign delivery
Trainers training : introduction	LMS trainers training	Filling dashboard document for pilot course	Multimedia authoring	Multimedia authoring	Course interaction
Analysing classroom courses	Authoring tools trainers training	LMS development meeting	LMS development	LMS development	LMS development delivvery
Project dashboard document	Pilot course analysis	Pilot course development	Pilot course development	Pilot course delivery	Connectivity check
Project guidelines document	Pilot course design and storyboard + buy or do?	Multimedia & storyboard consulting or development	Multimedia & storyboard consulting or development	Pilot course validation	Communication event
Select authoring tools	Communication plan	Connectivity chek	Capability check	E-Learnig quality training	Kick off meeting

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X. Documentation

CARNEGIE MELLON UNIV., 2003, *SCORM best practices guide for content developers,*
http://www.dokeos.com/doc/thirdparty/ScormBestPracticesContentDev.pdf

EPIC, 2003, *Learning design and e-learning*
http://www.dokeos.com/doc/thirdparty/Epic_Whtp_learningdesign.pdf

DOKEOS, 2007, *Dokeos 1.8 trainer manual,*
http://www.dokeos.com/doc/dokeos_teacher_english.pdf

DOKEOS, 2008, Flash tutorials : how to use Dokeos,
http://www.dokeos.com/en/tutorials.php