# Design and development of an e-Learning project management system:

# Analysis of the situation

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Abstract : The development of Information and Communication Technologies (ICT) is a major component of globalization, which inevitably marks our era. All human activities are affected including education (teaching / learning). To this end, these ICTs induce important changes in pedagogical practices by transforming the methods of communication, work and training. In this thread of ideas, several researchers in this field claim that the integration of ICT in teaching involves changes in teachers' practices and touches on their representations of learning and their methods of collaboration and evaluation (**1**), (**2**).

The use of ICTs has made it possible to set up a new mode of teaching, that of distance learning called E-training, E-Learning or online training. This type of training can be defined in relation to face-to-face training, as being a formation that is characterized by spatio-temporal relocation. Learners are not obliged to be present in the same places and at the same time. Distance learning is reinforced by the advent of networks and technologies based on the Internet (synchronous and asynchronous communication tools, Web, etc.).



**Context**

E-Learning is booming, it has invaded the education market in developed countries such as the United States, the countries of Europe and Japan. At the level of Morocco, it is promised to a strong growth. Moreover, in recent years, universities and Moroccan companies are using this new mode of learning.

Based on what exists, e-Learning covers different teaching practices. It offers training, or self-training, accompanied (activities, exercises (quizzes), personal work, group work, project groups, tutoring, coaching, case studies, project implementation, ...).

Customizing the training and services that accompany e-Learning and user engagement are the conditions for success. Learn by this new means present advantages especially in the management of time and space. Of course, this requires additional effort that services can provide in a rationalistic way (**3**). The aim is to produce an ambitious education system for a future learning society.

To expand the different e-Learning services, we propose in this work to create a system for project management especially for e-Learning. Indeed, we want to improve the ways and methods to develop modules and training offered in different areas of training by involving in the management of each project at the same time the training applicants the business experts (different actors of a project e-Learning). While taking into consideration the different stages of the project, the role of each actor in each step, the tasks to be performed by each actor and the communication between the different actors. Our e-Learning project management system will be aimed at trainers of trainers participating in literacy programs within the framework of the National Agency for the Fight Against Illiteracy (ANLCA) in Morocco. Indeed, the exploitation of the potentialities of the technology made it possible to decide to realize a computer tool based on the Web for a good management of its projects e-Learning, a purely computer application which makes it possible to manage the whole of the tasks of the different actors of an e-Learning project in the same collaboration space. This tool will help in the design and development of the different trainings that will be aimed at the different trainers participating in training literacy programs within the framework of the National Agency for Fight against Illiteracy in the different regions of Morocco.

**The steps of the e-Learning project**

Setting up an e-Learning project is a long process. Several steps mark the path from the initial idea to the final deployment. All projects must follow a structured, rigorous and consistent

methodology. E-Learning projects, whatever their size, do not escape this rule. According to the Analysis Design Development Implementation Evaluation (ADDIE) model, conducting an e-Learning project requires five phases (**4**).

**Analysis**: First of all, we must identify the needs that the e-Learning project must meet for both the training applicant and the learners. It is necessary to define the objectives of the training and at the same time define the ambitions of the learners in relation to the training. Several aspects to analyze such as the study of the feasibility of the idea of the project (mobilizing idea), the identification of the insertion conditions and the target population, the determination of the expected benefits, the choice of the learning support based on objectives, resources and constraints. In addition to these aspects of other aspects, organizational, pedagogical and technological, must be featured on the specifications that is the first deliverable in a project.

**Design**: The part of the design of an e-Learning project is the combination of the pedagogical aspect and the multimedia or technological aspect. The pedagogical design gives birth to three products: The synopsis describes in a general way the screens of the formation. The educational scenario is the result of the process of designing a learning activity. The storyboard for e-Learning is a document that specifies the visual elements, text, audio, interactions and navigation for each e-lesson screen.

**Development (or realization)**: The development phase concretizes the design phase. The production team develops the project on the basis of the validated storyboard. That is to say that the integrators produce the elements requested by the instructional designer in the storyboard (creation of images, videos, audio, pages, animations, navigation between pages, integration and insertion of contents, in place learning scenarios and setting e-Learning standards).

**Implementation**: The implementation phase or deployment phase consists in deploying the project on the chosen platform step by step. Thus, the project is first deployed on the platform then evaluated and finally actually deployed project (deployment of the driver on the platform, delivery of gradually finalized versions: beta version, alpha, version1 then organization of registrations, sessions, learning paths via the platform).

**Evaluation**: When we talk about the evaluation or the follow-up of an e-Learning project, we refer to two types of follow-up: technical follow-up (the system maintenance, the system update, the update of the LMS , ...) and pedagogical follow-up (the accompaniment of the learners throughout the training, the pedagogical follow-up of the trainers, the update of the contents, the feedback of the various actors,).

**Analysis of the situation**

To do this, it is essential to carry out a study of what already exists in the market to understand, first, the functional and technical characteristics of existing applications and, second, on which points we will focus. With this in mind, after an analysis of the existing concerning Web applications management e-Learning projects that exist on the market. By searching the Web for project management applications in general and in e-Learning in particular, we found a variety of tools in all areas that we classified into three categories:

**Web applications for project management**: Concerning project management applications (5), there are a large number of software development oriented project managers. However, in their operating principles, they can be adapted to the management of non-IT projects. (Kforge, Redmine, Tuleap, ...). Similarly, there are general project managers. These tools have been developed with the main objective of project management (ProjectPier, LibrePlan, Projetc'or RIA, ...). There are also project managers from the groupware tools. Indeed, many group work software now include project management functions (eGroupware and Agora-Project).

**Online Managements Websites**: With respect to online management websites (6), their principle is to use online communication tools to help manage, discuss, communicate and work with team members ( Planzone, Basecamp, Projectpro, ...).

**Collaborative project management tools**: Concerning collaborative project management tools (7) (Propulse, ProjeQtor, Trello, ...).

By analyzing the various tools, whatever the applications, sites or managers, we see that they handle all the management of projects in different areas, using the different functionalities (schedule tasks, consult dashboards, communicate between members a synchronous and asynchronous team via communication tools such as chat, e-mail and forum, report incidents, manage time and track time, manage and share

documents, manage forums and wiki, include Gantt calendars and graphs to help visual representation, ...) allowing a project to be carried out by a group of people in a company, in an institution. Regarding the web applications to manage e-Learning projects, the search brought did not lead to results. This means that the web applications for managing this type of project remain to be developed. The exploitation of these tools in the management of e-Learning projects is possible, but it remains to adapt the project to the functionalities of each tool. Our proposal is to propose a tool that makes it possible to involve all the different actors, in a collaborative workspace, in the realization, especially, of the e-Learning projects. In short, it is a tool that takes into account all the specificities of an e-Learning project, it remains a special case for several reasons:

- In the first place, the nature of the e-Learning project from a training point of view is based on a multi-stage approach, which is related to the pedagogical side;
- Secondly, e-Learning is a learning mode based on technological tools to transmit knowledge;
- Thirdly, how to manage the different actors of an e-Learning project.

All its peculiarities of the project e-Learning, allows me to conclude that the realization of such a project is not an easy thing, it is an ambitious project, but its realization requires efforts for the understanding of the field e-Learning.

First, we must define the different stages of the project. Then, it is necessary to define the different actors who participate in the realization of the project, then it is necessary to define the role of each actor in each stage. Finally, it is necessary to define the different interactions between the different actors in each step. Once the understanding of the project e-Learning is mastered and the definition of different stages, different actors, different roles and different interactions is achieved, we must choose a development process, This choice is not easy to make, an analysis of the various development processes that exist to make a choice that is appropriate to the nature of the project is required. Indeed, a development process is a determining factor in the success of a project, because it frames its different phases and characterizes the main features of its conduct. After choosing the development process, choose the method or the modeling language. In the end, the transition to development requires us to master the various technologies and technological tools chosen for the realization of the project. Thus, we need to choose development tools, database tools, diagramming tools for UML modeling and layout tools.

In conclusion, we note that the interest of the analysis of the situation is essential in the realization of such a project. It allowed us to have a clear idea about the products that exist in the market, about the different functionality they contain, and how we need to approach the design and development of our system.

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