RUNNING AN E-LEARNING PROJECT : TECHNOLOGY, EXPERTISE, PEDAGOGY

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Abstract: this paper is focused on methodological issues of an e-learning project: components, coordination tasks, actors role, design and implementation steps

Key words: learning project, technology, expertise, pedagogy

1. THE DIFFERENT COMPONENTS IN AN E-LEARNING PROJECT

Any e-learning project, either within a company or a training centre, contains three differentiated and complementary facets: a technological facet, an expertise facet and a pedagogical facet. In this part of the talk, each of them will be analysed, as well as the way they have to be co-ordinated in order to guaranty the optimal set-up of the e-learning project within the organization.

1.1 The three facets of an e-learning project

We shall describe each of the facets, and who is involved in each.

1.1.1 Technological facet

In any e-learning project, the technical aspects within the company will have to be taken into account, in terms of infrastructure. Technical limitations should always be considered in order to evaluate the project possibilities implementations. The following points should be analyzed:

- Whether the company has got or not an e-learning platform or Learning Management system (LMS).
- Whether the company can use the corporate Intranet in order to distribute courses towards the whole employees.
- Which are the final users' computer resources (PCs, equipped classrooms, Internet connexions, modems, available bandwidth ...).

Who is involved?

Normally the technology manager (Systems Manager or Technology Officer), is directly responsible of this facet. He however must be very coordinated with the Project Manager. In fact any technological choice should be conditioned by the whole project objectives, but sometimes the technological complexity creates some communication problems, especially if general and pedagogic requirements are not clearly specified. Then decisions are taken only through a technological viewpoint, and that may suppose that the project will not perform in the way the Project Manager wishes.

1.1.2 Expertise facet

The experts are responsible for the project contents. Contents quality and availability are major issues in any e-learning project. In corporate e-learning projects, experts use to be senior engineers or consultants who have got a great amount of experience in the company. In this case relevant information which should be used for e-learning purposes uses to be either in seniors minds, or in disseminated printed or digital supports. In any case finding this information and putting it in a homogeneous and organized support becomes a major issue for knowledge management purposes.

In this situation, either for conception of academic and university courses or for corporate e-learning purposes, experts who elaborate the material have to be very involved in the project, from the conception to the final validation and further updating process.

Subject-matter experts can also play an important role as on-line tutors once the courses are performing. The added value they can bring as specialists, who know their matter, can be a very good contribution to the e-learning project. Not all the experts, however, are good on-line tutors. Before the learning process they should receive training and their competences as trainers should be validated before implicating them in the e-learning implementation.

During the Project implementation, in order to evaluate adequately the delays, the subject matter expert will have to take into account the following elements:

- Available multimedia resources (text files documents, audio and video files, graphics, photographs and illustrations...).
- Material which has to be modified (videos which have to be transformed into shorter sequences, graphics which have to be modified, images that have to be optimized, ...)
- Non existing material: sometimes new material needs to be produced, that supposes the evaluation of different possible external providers: (multimedia designers, video recording, and audio studio recording ...).

Which kind of support has to be developed: (interactive training course, instructions guide, simulations exercises ...)

Who is involved?

The expert responsible for the whole contents (Contents Manager) will have to deal with several professionals:

- Project Manager
- Multimedia Editors
- video and audio Studios
- Experts responsible for part of the contents
- Graphical designer
- Illustrator
- Final testers

1.1.3 Pedagogic facet

This one is probably the most critical one, because it requires both traditional pedagogic and instructional design competences, and a few persons have got a wide and profound experience in this matter. Transforming written contents into multimedia format and making the course quite

motivating and performing from a learning viewpoint, is often quite a challenge. Even though contents are very good and the technological aspects (authoring tool, LMS, global communications infrastructure) are excellent, the e-learning project will fail if a good instructional design has not been realized.

Normally instructional design experts are either persons in huge companies e-learning departments, with a wide experience in creating training material with authoring tools, or professors who have been involved in e-learning material creation in universities (case of FESTO in Germany, who is using EasyProf technology at a corporate level, and of UPC –Universitat Politècnica de Catalunya- who has created an e-learning factory). There are also some multimedia free-lance specialists, or multimedia companies specialized in custom content creation).

That requires the following specific tasks:

- Learning profiles determination
- Associated learning itinerary establishment
- Pedagogic design of the material: (course architecture definition, level of interactivity, global information structuring into general modules, and specific structuring of the training modules into didactic units)
- Evaluations method design
- Student tracking determination

Who is involved?

- Project Manager
- Pedagogic expert(s)
- Contents experts
- On-line tutors
- Training Supervisor

1.2 How to co-ordinate the whole e-learning process

The global project Manager will have a difficult task in co-ordinating the whole facets. Let's take some examples of what may happen:

- If the technologic considerations get a higher importance with respect to the other ones, selected Learning Management Systems will probably allow running very powerful e-learning projects but ... what about contents? What about final users motivation and final training result?

There are unfortunately too many examples of very important companies that have invested in very expensive and powerful Learning Management Systems, and after a long process implementation they realize that no content is available for being distributed through the LMS, and no pedagogical analysis have been done on the real training needs according to the employees profiles. Then simple PDF or Power Point contents are hanged in Internet and final conclusion is that nobody is really following the course. And the ultimate result is that there is a general acceptance that e-learning does not work. But can we call those kinds of experiences e-learning?

- If the whole project responsibility relies on the Contents Experts and no specific instructions have been transmitted to them, there is a risk that delays are not respected, because the subject matter expert uses to add new contents and new chapters, being motivated by the contents quality and extension. A strict delay in contents delivery has to be established, and moreover an easy to use methodology on how information has to be delivered. Instructional designers have to transmit this methodology, but technical multimedia editors must specify the authors which kind of multimedia file has to be incorporated, and its technical characteristics (weight, format, resolution, size ...).

Probably the most important issue, that must condition the other ones, relies on the pedagogic design also called instructional design. Technological considerations as well as Experts considerations must be defined according to pedagogic objectives. Probably e-learning sector would be much more consolidated if most of companies had acted this way. We can expect that the e-learning sector in the following years will move towards more interactive and pedagogic contents, an increasing presence of easy to use authoring tools, and a decreasing presence of LMS.

2. THE ACTORS IN AN E-LEARNING PROJECT

In a multimedia project several persons have to take part and a significant number of tasks have to be performed, therefore the team members' co-ordination becomes quite an essential aspect.

We will distinguish between the contents elaboration process and the multimedia production itself.

2.1 CONTENT ACTORS

General co-ordinator:

He represents the interests of the educational centre. He controls final results in terms of quality, timing and productivity. He must be the edition team contact.

Authors:

They must write and elaborate the contents. Normally they are the subject matter experts.

Information officer:

He is responsible for searching and organizing the necessary information required for the project. He must organize multimedia digital archives that will represent the main content resources for the project.

Pedagogues

They have to define the way the information will reach the final user in a didactic and understandable manner. They must be, together with the general co-ordinator, in contact with the edition team.

Scientific experts

They will guarantee the technical and terminological validity of the created content.

2.2 EDITION ACTORS

Project Manager:

He is the maximum project responsible. He will have to forecast the required human and technical resources, he will be responsible for the product final quality and of time schedule.

Editor:

He realizes contents structuring and introduction of multimedia elements as well as interactivity. Senior Editor and Project Manager use to be the same person. The ideal situation is this same person is also an instructional design expert.

Graphical designer:

He is responsible for the course graphical design. Graphical interface quality relies on him.

Illustrator:

He will elaborate the graphical original material that is included in the application screens. He is not always necessary, but illustrations can

contribute to the course originality, provided they strengthen the pedagogic aspects.

Tester

He is the final actor of the process. It is recommended to assign this task to a new person, someone who is not involved in the other tasks. Naturally a contents revision has to be realized by the authors, but this final tester has to consider all aspects: technical, orthographical, global coherence ...).

2.3 TRAINING PROCESS ACTORS

Training Manager:

He supervises the training process implementation. He has to look for the technological resources allocated to the project, and also the training resources which have to be implemented before the e-learning process launching (on-line tutors selection and training, training supervision, training feed-back and quality control).

On-line tutors:

They are responsible of part or the whole course management. They must make the student tracking, by means of the technological available tools.

Administrator: He uses to control the courses administration: number of students, number of tutors, global communications to the students, final delivery of diplomas.

3. THE DIFFERENT STEPS IN AN E-LEARNING PROJECT

Any e-learning project must be organized according to the following steps:

CONTENTS PRODUCTION

TRAINING IMPLEMENTATION

4. THE E-LEARNING PROJECT CONSOLIDATION

Beyond the projects set up it is convenient to reach the project consolidation, so that project passes from being a pilot experience to a consolidated reality within the organization.

That will suppose getting a very complete feed-back from the pilot experience implementation that has to take into account the following elements:

- Contents adaptations to the project needs. It is very important to have a flexible authoring tool that allows changing and updating contents according to the pedagogic and organizational needs.
- Tutors profile adaptation to the learning objectives: tutors that have not performed adequately the learning process should be strengthened in their weaker points. Experience exchanges and meetings have to be organized between them.

- Technological resources must be adapted according to the e-learning program detected weaknesses.