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# DISTANCE EDUCATIONAL TECHNOLOGY

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Key words: educational technology, master degree, curricula, distance studies.

**Abstract:** In this paper the development of a new educational technology for the masters degree in Quality Management is presented. The educational program is addressed to managers / professionals / auditors from enterprises. The didactical technology employs a dedicated software for asynchronous/synchronous distance learning namely IBM LOTUS LEARNING SPACE 5.0 FORUM.

In order to deliver the courses there are 5 virtual rooms employed: Schedule, Media Center, Course Room, Profiles and Assessment.

## 1. INTRODUCTION

A new educational technology has been developed at "Petru Maior" University of Târgu-Mureş [1,2]. This technology is used for the masters' degree in Quality Management. "Petru Maior" University is the second place in Romania where such a technology has been used with the agreement of the National Ministry of Education.

The masters' specialisations objectives developed are to achieve knowledge and capabilities for quality managers / professionals / auditors regarding:

• Organisation, implementation and leading of the quality systems according to the ISO 9000 series;

• Accomplishing the task as management delegated to be responsible for the quality system;

- To effect internal system, product and process audits;
- To effect second part audits for evaluation of clients and suppliers;
- To evaluate the enterprise patrimony.

The student population in the academic year 2007/2008 employing distance education for master degree in Quality Management numbers 79 students.

Equivalent models with our distance master degree are developed at: Rensselaer Polytechnic Institute Troy, New-York in SUA, Tohoku University Sendai in Japan, California State University in SUA.

## 2. SOFTWARE EMPLOYMENT

The didactical technology employs dedicated software for distance learning IBM LOTUS LEARNING SPACE 5.0 FORUM, which is a product intended for distance synchronous/asynchronous education. The internet address of the distance learning courses is: <u>http://mmsc.upm.ro</u> (Figure 1) [2].

In order to deliver the courses there are 5 virtual rooms employed: Schedule, MediaCenter, CourseRoom, Profiles, Assessment.

The Lotus LearningSpace Forum Course **Schedule** (Figure 2) functions as an online syllabus for the course. The Forum environment allows teacher to create assignments and assessments, start discussions, and add reference materials. In many ways, this process resembles creating the familiar lesson plans that all teachers know and use for designing conventional classroom course work. In Forum, the student develops the course outline in the course Schedule database.

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Figure 1: The internet address of the distance learning courses

Teacher can use documents in the **Media Center** to present audio clips, video clips, links to Web pages, and online text and illustrations to the students. In addition, Media Center assignments can include links to other software applications used to support the course, such as spreadsheet application distributed to the students on CD-ROM. The materials a teacher can add to the Media Center are limited only by the resources, the Forum site and the course students have available.



Figure 2: Schedule

In the LearningSpace Forum environment **CourseRoom**, serves the function of a classroom. It is where discussions and other collaborative activities take place. In the CourseRoom, teachers can start, monitor and contribute to discussions, comment on assignments submitted by teams or course participants, and respond to requests for instructor review of assignment.

The Lotus LearningSpace Forum **Profiles** database contains a document for each course participant, including teachers and students. The profile documents contain information that serves to introduce students to other participants in the course. They help to foster the formation of an online community of learners that is essential to the online learning experience. In addition, the Profile database allows teacher to create profiles for teams in his course that are used for discussions, assignments, and other activities.

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Profiles also contain information that Forum uses to integrate a participant into a course, such as their e-mail address and the drive letter of their CD-ROM drive.

In Lotus LearningSpace Forum, **Assessment** (Figure 3) measures the progress of a course participants. In addition to the quizzes and exams that all instructors use for grading students, teacher can create surveys that allow him to gather feedback from student responses to specific questions, as well as create self-assessments that students can use to evaluate their own progress in the course.

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Figure 3: Assessment

## 3. DIDACTICAL TECHNOLOGY

The strategy for the didactical technology is to digitize the normal classroom activities and make them available to download from internet via streaming video. This version of videotaping may work well for some content and some students.

The other extreme are teachers that emulate independent study, and may give the student a copy of slides used in-class presentation and tell them to go to it. Independent study is good, but misses the input and feedback from teacher and other learners.

Thinking at the two extremes we have presented above, it is very evident that the structure and design of the learning experience is crucial.

We have revisited some important concepts of learning, and we have adopted a design strategy for the distance learning program.

Figure 4 shows the cyclic nature of the design, indicating that all elements should be considered for each and every learning experience, regardless of length.

• STEP 1: The Interactive Distance Learning (IDL) Cycle starts with an introduction of the objectives and a statement of the necessary bibliographic material for the course module. It tries to "humanize" the learning environment by making the student feel a part of a learning community.

• STEP 2: Following the motivational introduction, students are exposed to a concrete example (Concrete Experience CE) of what they are about to study.

• STEP 3: Students are then asked to think about this experience (Reflective Observation RO) and share those thoughts with other students. This is all done asynchronously.

• STEP 4: Abstract Conceptualization (AC) presents principles or theories and requires feedback on performance.

• STEP 5: Active Experimentation (AE) is an activity that requires the student to go beyond regurgitating the content presented in Step 4.

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• STEP 6: The student is prepared to transfer this new knowledge to future learning experiences after Evaluation.



Fig. 4: Interactive Distributed Learning Cycle

This Cycle serves as a template for the learning experience. Teachers can implement this cycle in any number of ways, depending on their specificity.

The learning modules lack personality, so it needs to be humanized. Among other things, we need to motivate students, orientate them and give them direction. Students seldom read a lot of text on the web. Hence, we need something more than text to add this personality.

One possibility could be to use a second window with streaming video just near the text window. It gives the illusion of the instructor talking directly to the learner. The effect adds warmth to the learner's experience.

Video streaming can be used at major transition points. Elsewhere in the module, streaming audio can be used to provide direction to the learner as well as support and encouragement.

As a conclusion we consider that there is no single way to implement the cycle and also, asynchronous learning is not for everyone. Much depends on the learner's maturity and motivation.

## REFERENCES

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