

Quality of DIDACTIC resources: The Università Telematica “Guglielmo Marconi” experience

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What is required for a student to have a high quality graduate education?

What is required for a University to excel in providing one?

These questions have inspired considerable discussion and the research activated by the Università Telematica Guglielmo Marconi (U.T.G.M.)

Context

On the debate of educational courses quality, the Università Telematica Guglielmo Marconi (U.T.G.M.) started from the analysis of the more frequent “worst practices” in order to translate quality criteria into useful indications to design and manage a course.

Given the focus on methodologies rather than technologies, the research objective is to achieve a balance between teaching needs and technological systems, also taking into account creative possibilities that the latter offers.

E-learning methodologies adopted by the U.T.G.M. to design and develop its educational courses are based on the use of adequate technologies and pedagogical approaches to produce high level educational outcomes (cognitivist psychology, constructivism, cooperative learning, etc.); a wide range of educational technologies are also employed, together with web technologies (e-learning platforms, e-mails, mailing lists, forums, self-evaluation tools, tools for sharing information, streaming video, streaming audio, texts, etc.).

Objectives

With regards to quality issues aspects, the U.T.G.M. interprets and applies that concept going upon several elements, trying to create high quality processes and products with reference to quality indicators and control procedures, able to verify the effective application of these indicators in specific contexts.

Since e-learning is a complex system, the quality of a networked formative action can't be totally evaluated only with “objective” indicators (that often implies the bare respect of technical standards or management suggestions).

Instead, various components, elements and issues have to be examined, together with their multiple relationships, in order to evaluate educational processes and products effectiveness and quality.

The Unimarconi finds its products and services quality firstly through the achievement of excellent results at the end of a study curriculum: in this case the adopted indicators are mostly connected to the knowledge assessment and the analysis of side outcomes.

Indicators able to verify the effectiveness of adopted methodologies rather than to control technical or descriptive standards' respect.

The Unimarconi is trying to move from a preventive systemic approach, based on strict models, to a more flexible pro-active approach, based on the research of effectiveness and continuous improvement.

But the latter fundamental evaluation is actually **ex-post** and it is usually undertaken by the University through questionnaires and interviews administered to every graduate of the structure.

Those questionnaires are implemented into Virtual C@mpus, the e-learning Platform used by Unimarconi that hosts all the educational courses the users need to attend.

At the end of the course, in fact, the users answers to questions regarding the main aspects of the 4 parameters adopted by the quality model explained below.

Those data are periodically analysed by the University.

Up to now we have collected circa 500 questionnaires fully filled in.

Another questionnaire (much more technical) is also submitted to the attention of users at the moment of their enrolment.

Its objective is to know all the technical aspects of the infrastructure that every user has in order to follow a course in e-learning modality (PC capacity, Net capacity, Modem, computer knowledge level, etc...).

Most of the users enrolled has completed the technical questions and the results are not what we expected: 50% of the total of students (12,000) does not have technical suitable infrastructures to follow e-learning courses with high levels of interactions and multimedia aspects.

How can we evaluate the possibilities that a formative intervention can produce a significant knowledge **before** and **after** the course? In other words, *how can we evaluate the quality of an online course?*

As far as that aspect is concerned, Unimarconi follows a quality process highly focused on many different monitoring and supervising moments from the Design phase to the Fruition of the Course into the Platform.

For those three main phases of the process, a group of experts is involved:

1 - Design and Management of didactic materials Phase:

Teachers; Subject Matter Experts, Instructional Designers

2 - Production phase:

Subject Matter Experts, Content Editors, Content Packagers, Graphic developers, Information Architects and Developers

3 - Fruition on the Platform:

Information Architects and Developers, Help Desk, Faculty Coordinators, Tutors and Teachers

Into each phase and during the passage between each phase, Unimarconi is very careful to follow a quality system based on many monitoring and check moments, though the use of an indicators system for the evaluation of the courses didactic quality intended for e-learning education.

Since there are several characteristics able to make a course effective from a quality didactic point of view, in order to carry out sharable and comparative evaluations between the different courses, the U.T.G.M. has established a common reference standard able to resume the necessary peculiar characteristics and the essential requirements. Such requirements system has examined every dimension concerning didactic quality of the online degree courses and it provides effective indicators, with the aim of detecting the characteristics of the course itself.

The use of technology is fundamental since it allows UTGM to keep track of all the data collected into Virtual C@mpus Platform and through a Management tools that allows all the people involved into the Design and Production phases to do their job in the best way and to monitor all the aspects concerned to those phase, with regard to high quality standards results.

The Platform and the management tolls created for UTGM's need are able to allow us to collect and analyse all the information in order to achieve ever more valid and high quality standards.

The parameters taken in consideration in the U.T.G.M. model are:

♣ **The Learning quality**, including:

Didactic materials contents quality (audio and video lessons, Abstracts, Synthesis, Conceptual maps, interactive exercises, simulations, etc...)
Structure quality of the formative path (the design of the subjects, propaedeutic aspects, etc)
Participation quality (interest and motivation, numbers of accesses into the Platform, numbers of activities done, numbers of virtual classroom meetings attended, etc...)
Students results quality (not only the examination passed, but all the intermediate objected previously designed and performed)

♣ **Teaching quality**, including:

Teachers/tutors competences quality (knowledge, ability and skills, etc...)

♣ **Learning environments quality**, including:

Technological equipment quality (presence of synchronous and asynchronous communication tools, download areas, if necessary into the didactic design, etc..)

Interface quality (ergonomics standards, texts, images, html standards, etc...)

Infrastructures quality (is it fast enough?)

Logistics services quality (help desks and time to resolution of the technical problems)

Feedbacks quality

♣ **Interactions quality**, including:

Tutors and students interactions quality (skills, preparation and capacity to create social and communication moments, etc...)

Students interactions quality (do they interact each other? In which way?)

Summary of Results

The quality model adopted by the UTGM has produced important results in all the dimension take into account.

By respecting the learning quality we are now able to produce didactic materials related to the set objectives, flexible, based on dynamic architecture and more suitable to the students needs. From this point of view the learning path design seems to be one of the most important indicators of the didactic efficiency. The level of efficiency has been evaluated in consideration of the results achieved not only from a quantitative point of view, but also from the qualitative one. The only problem is linked to the students participation, not yet in accordance with the expected results.

Concerning teaching quality what emerge is that different teaching styles can produce different results, in particular in the on-line education and e-learning field, which ask teachers and tutors to improve their knowledge basic competencies with transectorial competencies. In the UTGM experience an accurate planning and organization of the courses is the key role.

The learning quality environment factor has revealed that for a functional use of technology is necessary to take into consideration the main characteristic of the users, above all their knowledge and technical background

Conclusions

In order to enhance the didactic efficiency and to improve the didactic materials production the UTGM is changing its traditional approach, from a systemic approach, based on rigid models to a pro-active one, flexible and able to evaluate the many factors that influence the results achievement. The level of development achieved through our experience let us believe that this kind of model can be succesfull in terms of expected results from both users and organization.

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