# EU-US EXPERIENCE IN APPLICATION OF EFQM MODEL FOR LLL MANAGEMENT

**Alfredo, Soeiro, University of Porto, Portugal**

## A. Introduction

The paper is divided in two main parts. The first one addresses the presentation of the results of the EU-US financed project DAETE – Development of Accreditation of in Engineering Training and Accreditation (daete.up.pt) that occurred between 2006 and 2008. The second is dedicated at presenting an ongoing project that continues and enlarges the objectives of the previous project. Both are dedicated at the quality improvement of the management of LLL centers. The first project aims at internal impact based on self-assessment tools of LLL centers and the second project is dedicated aims at improving the management system of the LLL centers. DAETE was based on the adaptation of the EFQM model to LLL while providing a tool allowing the analysis of performance and results of LLL centers. UNIQM tries to integrate existing tools (like the DAETE matrix) and provide a set of tools focused on the continuous improvement of LLL. UNIQM tries to provide a coherent model for continuous improvement of LLL centers.

The DAETE project was financed by the program Atlantis and is supported on equal terms by the European Commission in the European Union and by FIPSE (Fund for the Improvement of Post-Secondary Education) in the USA. The project was approved under the strand Policy Oriented Measures. There were four partners in Europe (U. Porto, Helsinki U. Technology, Imperial College and U. Polytechnic of Valencia) and one partner in the USA (U. Wisconsin) joined later by three other universities (U. Michigan, Rensselaer Polytechnic Institute and Georgia Institute of Technology).

The UNIQM project is financed by the European Commission and is included in the LifeLong Learning program. It has four universities as initial partners (U. Polytechnic of Valencia, Imperial College, Helsinki U. Technology and U. Porto) and may have four other partners (U. Krems, Katholieke U. Leuven, Tecnhical U. Delft and U. Aarhus) if the extension is accepted by the European Commission. The project started in 2007 and will end in 2009 but a new ending date was proposed.

## B. DAETE Project Overview

The relevance of this project is directly connected with the mobility of engineers between Europe and the USA. This may be relevant with the outsourcing of engineering projects on both sides of the Atlantic and with the need to cooperate in the Lifelong Learning paths of engineers. These issues are currently important and crucial for engineering education and training. This also reflects the need for new and innovative quality assurance procedures for Continuing Engineering Education, in particular, and for Lifelong Learning, in general. In fact, the motivating issues and the results are common to the specific and general areas of LLL.

The objectives of the project were to present among the partners the experience and practices of the participating institutions in quality control and accreditation for engineering education and vocational training, to analyze and debate the models that can be used taking account the different experiences on both sides of the Atlantic, to produce guidelines advisable for quality assurance and accreditation, to test the recommendations and to adapt the guidelines to the feedback results.

The innovative strategies of this project consisted in addressing the different approaches of EU and US about the topic, allowing the exchange of experiences and of results of the case studies. This allowed a reciprocal understanding of the benefits of the methods that can be used by the engineering educational and training community in the UE and in US. That was particularly relevant to the part of the EFQM model in the area of the Results section where the contribution of the US partners fostered the progress and adaptation of the new sub-criteria.

The added value of this transatlantic cooperation can be me measured under two perspectives. The first perspective is related to the sharing the experiences of the partners on EU and US concerning the quality assessment of education and training in LLL. In effect the environments that framed the

progress of this area have been different in these two regions. In Europe the research and development about quality evaluation of LLL has been based on joint projects supported by the EU funding. As examples of this group are the projects where EUCEN (European Universities Continuing Education Network) participated like Equipe and Equipe Plus. In the US the quality assessment has been developed using market analysis and the activities of organizations like ASEE (American Society of Engineering Education) and UCEA (University Continuing Education Association).

These two lines of action have created different management approaches and benchmarking results that were analyzed together by the partners. The partners of this project have worked closely to extract the benefits of the differences existing in theories and in the implemented practices. The project had this significant motivation of having this exchange and debate about the methods and the practices that would lead to an improvement of the specific knowledge and of the implemented practice.

The planned activities consisted in presenting experiences and case studies in the area of accreditation and quality assessment of engineering education and training, in running joint meetings of partners to discuss the models and strategies (evaluated by the partners) and in testing the improvement recommendations among partners. This first phase produced a version accepted by all partners based on the model of the EFQM (European Foundation for Quality Management – www.efqm.org). A large amount of work was done to include the correct criteria and sub-criteria that would be valid and effective on both sides of the Atlantic by the LLL managers. This was the most difficult and challenging part of the project. It brought intense and fruitful debates among the partners with clear results.

A second phase consisted in testing and benchmarking the model within the organizations of LLL and to reformulate the model and guidelines according to the testing results. There were two motivations for this activity. The first was to disseminate and engage the LLL communities in Europe and in USA. The second was to test, on an enlarged scale, the model accepted by the partners. This phase was implemented in three conferences. One was European and organized by SEFI (Société Européenne pour la Formation des Ingénieurs – www.sefi.be) in Rovaniemi, Finland as the Forum for CEE. The second was the conference of ASEE (American Society for Engineering Education – www.asee.org) CIEC (Conference for Industry and Education Cooperation) held in New Orleans, USA. The third workshop, where the final version of the model was tested, was the 12$^{th}$ World Conference of IACEE (International Association for Continuing Engineering Education – www.iacee.org) held in Atlanta, USA.

The final result of these two phases was a model that is composed by a matrix for self evaluation for the LLL centers. This can be used for improvement of the LLL centers in two ways. One is to compare the results with those of other LLL centers. The second is to use the matrix of self-assessment to perform an internal reflection and debate about the management of the center. In both cases the help of experts on the method from IACEE or from other LLL or quality assurance organizations can be applied to improve the management.

The reaction from the European and American partners that participated in the workshops helped the tuning of the model and of the criteria and sub-criteria. There was also a good reaction from participants with some possible developments in adaptation of the tool for a more generalized approach to LLL management. One of those developments from the DAETE project was also the possible continuation in subsequent research projects in Europe and in the United States. For instance, in Europe there is already the execution of the project UNIQM (University Quality Management) that will try to extend to a more coherent and abridging model of the university LLL management system. Another development is the new proposal being prepared for the Atlantis program in 2009 looking at similar issues on both sides of the Atlantic. Another important step in the exploitation of the matrix tool is the possibility of IACEE to adopt it as part of the quality evaluation activities of CEE centers around the world. Another relevant action to the project results was the translation into Chinese of the DAETE matrix by Tsinghua University and the distribution of the publication among the Chinese centers.

## C. UNIQM Project Overview

As mentioned before the project in the continuation of DAETE in an European context is UIQNM (University Quality Management). The importance of quality helps improving standards and increasing efficiency in LLL centers. While this is widely understood with respect to undergraduate programs, this is not the case with LLL activities, where there is a wide diversity of both offerings and providers. The questions raised in terms of quality is how it can be assessed effectively and can it be produced a general model that can meet a wide range of needs in terms of management. The project tries to define a framework and several tools, which will enable centers of LLL to evaluate the quality of their operations and enable them to benchmark against other similar institutions. Another objective is to offer institutions a forum and a test-bed for these tools through the establishment of a network based on UNIQM.

The project partners, listed below have experience in addressing quality issues within the university sector, especially in regard to LLL. The partners in UNIQM are Universidad Politecnica de Valencia, Spain, University of Porto, Portugal, Helsinki University of Technology, Finland, Imperial College London, UK, University of Aahrus, Denmark, Danube University Krems, Austria and KU Leuven, Belgium. The approach is not arbitrary, but is rooted within the broad principles of the European Foundation for Quality Management (EFQM), with its specific criteria and sub criteria revised to suit the needs of a LLL environment. Case studies, best practices guides and a scoring system will be developed. The final outputs comprehend a set of three coherent quality management web-based tools: (1) questionnaire for self assessment, (2) matrix for self assessment and (3) matrix with facts for external evaluation.

The work-packages of the project are nine. The first is Project Management intended as service to research activities, administrative daily management, progress reports preparation, co-ordination of partners among themselves and towards the Lifelong Learning priorities, meetings organization. It is also considered the continuous monitoring activities, including risk analysis and actions to be taken. The second WP is Quality and Evaluation Plan. There will be an external evaluator that will monitor the project management activities. The external evaluator will prepare a report every six months analyzing project activities and determining the main strengths and weakness of project management. There will also be internal evaluation reports made by each of the partners reflecting on what was performed versus what was planned and a preview of the future tasks. The WP3 is Dissemination. It has three main components: website development, community building and international conferences. The first one is related with the website of the project designed to inform about project activities and to involve centers and professionals interested on quality management of LLL. The community building consists in creating a virtual social network on LLL. The third is a possible presentation on each related international conference. The WP4 is Exploitation. It aims at increasing the level of importance of LLL quality management at a policy level. The WP5 is Development of the model of LLL Quality Management. The goal is to define a methodology and a set of standard forms intended to revise the model of EFQM adapted to LLL. The WP6 is Development of Tools for Quality Management in LLL. The objective will be to create a set of three quality management tools: (1) questionnaire for self assessment, (2) matrix for self assessment and (3) matrix with facts for external evaluation. WP7 is Definition of Standard Processes and Indicators. It deals with the definition of standard processes and indicators for lifelong learning activities. WP8 is Development of Web Based Tools for Quality Management in LLL. It aims at creating the needed infrastructure to deal with the services foreseen on the project. The WP9 is an International Conference on Quality Management in LLL. The objective of this work-package is to contribute to the dissemination of the results of the project, to help on valorization activities and to share experiences on quality management in LLL. Another important objective of this international conference is to lay the foundations for the creation of a network dedicated to QM in LLL. Major organizations will be invited and, together with results presentation, the possible statutes will be presented for the start of the network.

*References*

Website: daete.up.pt, Development of Accreditation and Training in Engineering Training and Education, accessed 26Feb09.

Website: www.uniqm.net, University Quality Management, accessed 26Feb09.