

CEE/CPD: A PERSPECTIVE FROM EUROPEAN ENGINEERS PROFESSIONAL ASSOCIATIONS

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INTRODUCTION

This report tries to present some ideas about CPD/CEE from the point of view of professional organizations. Trainers and users of CPD/CEE have different attitudes towards LLL for engineers although they address the same problems and solutions. A clear example is the denomination CEE that is used commonly among trainers and higher education teachers while professionals call the same activity CPD. The root is of course based on the basis on the motivation of teachers, that underline education, and of engineers, that are concerned with the profession and its development.

FEANI - European Federation of National Engineering Associations - is an association that congregates several national professional engineers association from twenty nine European countries. It is an organization that tries to present the opinions of the engineers in Europe translated from the participation of the respective national associations. Another major goal is to develop and consolidate the professional capacity of its members.

An example of the activities of FEANI is the creation and award of the EUR ING professional title to improve the recognition of engineering qualifications in the several countries in Europe that are members. Another is the work in CPD through the activities of the CPD Committee. More information can be obtained in www.feani.org. This report is divided into three parts where the first is a summary of the history of CPDC, the second part is the presentation of the CPD for engineers in Ireland and the third part is the description of the proposed system for CPD in Portugal.

FIRST PART

HIGHLIGHTS FROM THE WORK OF THE FEANI CPDC - CONTINUING PROFESSIONAL DEVELOPMENT COMMITTEE

(Transcript from FEANI News, September 2008, pp. 16-17)

Author: Mr. Claes Trolle, former CPDC Chairman of FEANI, 1999 - 2005

During the 90's, until the new Statutes and Bylaws were re-written, FEANI had three standing committees:

- a) The European Monitoring Committee (EMC)
- b) The European Affaires Committee (EAC)
- c) The Continuing Professional Development Committee (CPDC)

These Committees helped to pursue the federation's objectives and assisted the Executive Board in defining its Policy in their respective fields. The Committee on Continuing Professional Development (CPD) was established in 1993 from the Working Group Continuing Engineering Education created in 1992. The CPDC has always been based upon "voluntary" membership: there have been no quota for the participation and it has been open to all national members without any restrictions as to the geographical location of the participating national members.

I was invited to join the CPDC in 1995. The Chairman was Professor Mogens Kümmel. A major report had just been concluded, called the Aquaforce phase 1. This ambitious project aimed - already in those days - to safeguard and guarantee quality in CPD, developing criteria on which an efficient system could be based for accreditation for CPD courses. A driving force behind the execution of the project was Peter Hector, the secretary. The report was published in 1993/1994. The intention was to proceed with phase 2, but unfortunately lack of funding did not permit the programme to be completed up to the implementation of the accreditation process. The project was stopped after production of the "Project AQUAFORCE Part I" handbook which defined a list of criteria which are an adaptation of the International ISO 9001 and 9002 Standards to education. After the Aqua Force project the Committee was working hard on what was later to become the FEANI Policy and Guidelines on CPD. Christine Somers was responsible for this work under the supervision of the Chairman.

Effective communication was identified as one of the top five priorities for the work of the Committee. Dr. Ing. Luciano Fassina, as leader of the Committee's Work Group on Communications, produced a document in September 1996 with some ideas in the development of a strategy for the Committee's communication arrangements. In 1998, Heinz Müller started to develop a concept for the idea of enhancing the efficiency of communication by setting up a website on CPD to deploy and increase dissemination of services and information for engineers who were members of any of the National Member Organizations. The Communication Project was finalized in 2001 and the site "Pinboard" was operational on the FEANI website in March 2003.

The guidelines of FEANI's CPD Policy were approved at the General Assembly in Lillehammer in 1997. FEANI would work towards implementation of the agreed policy to raise awareness of the importance and urgency of CPD to economic competitiveness. Mogens Kümmel was elected Vice-President of FEANI and the new chairperson was Christine Somers. FEANI Headquarters Office moved from Paris to Brussels in 1997 and we got a new CPD secretary, the very competent Anders Hagström. Together with the newly elected Secretary General, Sirka Pöyry, the Secretariat produced the very useful FEANI Handbook, comprising not only the Statutes and Bylaws, policies etc. but also most of what we can find today on the FEANI website - which did not exist in those days. The main reason to move to Brussels was to get closer to the European Commission and thus make FEANI the official "Voice of the European Engineers".

During 1998, FEANI submitted two LEONARDO applications:

- a) project “EuroPro Record”, which was based on two previous projects (EuroPro, a Concept for Strategic Competence Development, and EuroRecord) where FEANI had been one of the key partner
- b) project “EDWIN” (Education with Industry) aiming at investigating CPD practices and needs with European Industry, to benchmark and analyze them, to develop new concepts, to offer practical recommendations and widely diffuse them.

The extent of the implementation of these projects depended on the success of the applications and on the outside financing. In 1999, Ivan Brikké took over the Chairmanship of the CPD and the Committee worked hard on the EDWIN project. It worked all the way - almost! The application for the project was handed in to the Commission. We had arranged for participating universities and industry and the application was approved by the Commission, but not by the Executive Board of FEANI! The financial risk was thought too big, so the Contract was not accepted. However, the CPDC thought the idea of making a survey of CPD in European Industry a worthwhile one.

The Chairman of the CPDC managed to get assistance from a big high-tech Swedish company. This, in conjunction with hard work from Germany, Finland and some other countries, resulted in carrying out the project anyhow - without funds from neither the Commission, nor from FEANI. The result was presented at a seminar in 2001, which also saw speakers from various countries. This was not the first CPDC seminar. Already in Lillehammer 1997 the CPDC had arranged a seminar on CPD with participating speakers from Norway, Sweden, UK, Spain and Hungary. The CPDC is used to work in project form. We aim at starting the project with a brainstorming session to get a quick start - and involving as many as possible of the CPDC members. Just to mention two more projects:

- a) E-learning project, aiming at promoting e-learning in Europe;
- b) Employability toolkit aiming at assisting the engineers to be continuously employable, presented in 2005.

One of the latest projects, to be presented at the GA 2008, is the revised FEANI policy on CPD. The basics have not changed, but ways and means etc. are subject to technical development. Increasing international mobility is important, the Bologna declaration, the extension of the EU are other factors influencing the way we and our engineers look upon CPD and the possibilities to develop in our daily work. As Chairman, I approached the National Members asking them to contribute to the work of the CPDC. To get more involvement was not an easy task! Still - the more participants (within reasonable limits), the more exchange of ideas, the better the possibilities to find the Best Practice in various areas. To encourage all countries to participate in our meetings and our work, we have since many years arranged our CPDC meetings in various countries. In this way we get to know more about the

current situation for the engineers in most parts of Europe and we increase our network.

Participating in the work of the CPDC is in itself - CPD!

SECOND PART

ENGINEERS IRELAND CONTINUING PROFESSIONAL DEVELOPMENT SCHEME FOR LEADING ENGINEERING EMPLOYERS

(Transcript from FEANI News, March 2009, pp. 19-22)

Author: John Butler, CPD and HR Director, Engineers Ireland, Ireland

Engineers Ireland is the oldest professional organisation in Ireland having been formed in 1835 and is one of the largest professional organisations in the country. It represents all disciplines of engineering at all levels and is structured on both a national and a regional basis to address both sectoral and regional requirements.

In 1999 the organisation recognising the critical importance of Continuing Professional Development (CPD) and as a response to a national strategy to create and sustain a leading economy in Ireland decided to investigate the introduction of an Accreditation scheme for organisations covering how they both designed and implemented CPD for their engineering employees. This would be a similar approach to CPD as ISO 9001 is to quality i.e. implementing a systems approach to ensuring effective CPD which meets the current and future needs of both organisations and their engineering employees. The definition used by Engineers Ireland for CPD and Accreditation are:

CPD - Continuing Professional Development

It is defined as planned acquisition of knowledge, experience, skills (and personal qualities) for the proper execution of our professional and technical duties throughout our careers.

CPD - Accreditation

A framework designed to support lifelong learning by stimulating and recognising good organisational practice in the area of professional development practice for engineers and technical staff. Whereas in the past CPD for engineering staff was considered to be almost exclusively within the technical area however it has now broadened to a wide range of areas: Technical, Finance, Marketing, Legal, IT, HR, Management and Soft Skills.

Similarly whereas the main method for acquiring CPD in the past was through the attendance at external courses now there are a large range of delivery methods for CPD. These are Preparation for Professional Title, Knowledge Sharing Programs, Educational Site Visits, Postgraduate Studies, Professional Organization, Present Paper/Report, Attend Lecture/Seminar, E-learning, Academic Courses, External Program, Internal Training Courses and Lunch "n" Learn.

The majority of learning achieved by individuals is through experience but the CPD Accreditation Scheme operated by Engineers Ireland focuses on formal CPD in areas like education, training, knowledge sharing and CPD relationships like coaching and mentoring. These are distributed as Experience with 70%, Formal CPD (education, training, knowledge sharing) with 10% and Formal CPD (relationships like mentoring and coaching) with 20%.

To date 106 organisations employing in excess of 16,000 engineering professionals are accredited to the scheme and more than another 200 organisations are committed to the scheme and to achieving accreditation. In total the organisations, both with accreditation and working towards accreditation employ in excess of 33,000 engineering professionals. Figure 1 shows the build up of accredited organisations and figure 2 shows the total number of organisations both accredited and working towards accreditation.

Figure 1

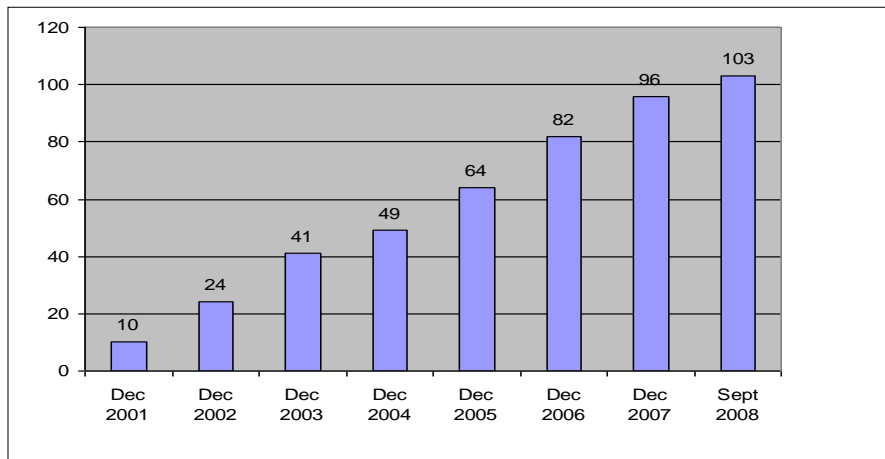
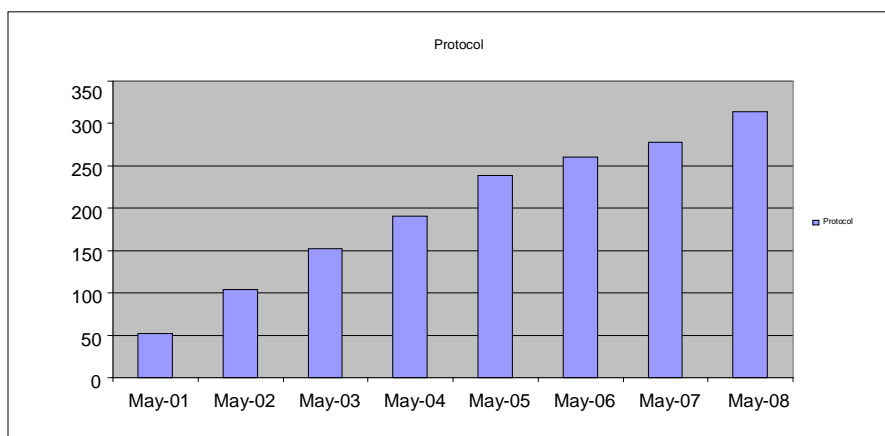


Figure 2



The distribution of activities between the organizations with CPD Accreditation is Consultancy (39), Pharma/Medical Device (17), ICT (14), Construction (8), Local Authority (7) and Manufacturing (6). The distribution among organizations with CPD looking for Accreditation is Consultancy (3419),

Pharma/Medical Device (3290), ICT (1516), Construction (736) and Local Authority (407).

A very important element of any accreditation scheme is the involvement of SME's and currently 51% of Accredited Organizations are SME's which is in line with the Irish Governments Policy on Life Long Learning. There is a good mix of organizations accredited to the scheme multinationals and indigenous Irish, manufacturing and service, public and private sector, large and small, new and established, which shows that the concept of effective CPD is applicable to all types of organizations.

The Scheme for Accreditation has 7 Criteria:

1. Develop CPD policy;
2. Appraisal system;
3. Training records;
4. Mentoring programme;
5. Professional institutions membership;
6. Knowledge sharing system;
7. Management system.

The Process of Accreditation is composed of:

- a) Formal contact between Engineers Ireland and the Organization;
- b) Agree CPD accreditation as an organizational goal;
- c) Gap analysis, review status of CPD systems;
- d) Implement CPD systems and practices;
- e) Written submission to Engineers Ireland;
- f) Engineers Ireland Accreditation Unit review;
- g) CPD Accredit Employer Award;
- h) Recognition and Public Relations;
- i) Network and Benchmarking.

The first stage is the Protocol whereby the top management of an organization gives a formal commitment to CPD and includes a reference to the CPD strategy in the organizations strategic and operational plans. The key players benefit from a list of potential benefits of CPD scheme and these are:

A. For Employer

- a) Maximises the potential of employees;
- b) Optimises payback from Learning & Development expenditures;
- c) Creates an innovative and dynamic culture;
- d) Better aligns business goals, team plans and Personal Development Plans;
- e) Facilitates and supports career planning and promotional procedures;
- f) Improves recruitment and retention of staff;
- g) Raises the profile of the employer.

B. For Individual Engineers/Technicians

- a) Career goals;
- b) Keeping pace with changing technology;

- c) Achieving recognition;
- d) Staying in the job market;
- e) Demonstrating commitment to your profession;
- f) Identifying progressive employers.

C. For Engineers Ireland

- a) Promotes a lifelong learning agenda through CPD;
- b) Ensures employers of engineering professionals support the up-skilling of their technical staff;
- c) Enhances the engineering profession in Ireland.

During 2008 a comprehensive review of the programme was carried out based on best practice both in Ireland and internationally. Part of this review was an analysis of the amount of CPD received by engineering professionals broken down by industrial sector and this is compared to the rate of technology within the particular industrial sector. The results of days annually spent, in average, are:

- a) 9.6 days for ICT and High-End manufacturing;
- b) 5.5 days for construction sector;
- c) 6.6 days for consultancy;
- d) 7.3 days for manufacturing;
- e) 6.7 days for public sector;
- f) 8.3 days for utilities;
- g) 8.4 days for pharmaceutical/medical.

Based on this review in 2008 a revised CPD model has been developed and became operational on 1st January 2009. The new model can be divided into three parts, as follows:

- a) Initial Accreditation - this comprises of 8 Criteria and applies to all organizations undergoing the accreditation process. These are:
 1. Internal CPD Committee;
 2. CPD policy;
 3. Performance management and development system;
 4. Formal CPD - minimum 5 days average recorded;
 5. Mentoring for Professional Development;
 6. Linkages with professional institutions/Learning bodies;
 7. Knowledge sharing activities;
 8. Evaluation of impact of CPD.
- b) Employers of more than 100 engineers and technicians are reviewed under two additional making 10 Criteria. These are:
 9. Postgraduate education activity;
 10. Competency frameworks/Talent management.
- c) Organizations with a rapid rate of change are reviewed under an additional two Criteria making 12 in total for this type of organization. The two additional criteria are:
 11. Advanced knowledge management practices;

12. Fostering creativity and innovation.

THIRD PART

PROPOSAL FOR CPD OF ENGINEERS IN PORTUGAL

(Transcript from FEANI News - March 2009, pp. 17-18)

Authors: Alfredo Soeiro (University Porto) and Jose Vieira (University Minho)

A proposal for Continuing Professional Development (CPD) of Engineers in Portugal was analyzed by the National Directive Board (CDN) of Ordem dos Engenheiros (Engineering Professional Association) in its meeting of July 2008. As a result of this Board meeting an internal committee was created to study and further develop this proposal to an implementation stage.

A synthesis of the main characteristics of the proposal is presented in the following items:

1. Objectives

The proposal has two main objectives:

- a) Ensure a regular updating of knowledge and skills of Portuguese Engineers.
- b) Provide Ordem dos Engenheiros with a system that guarantee quality of training for its members.

These two objectives can be sought as independent issues in terms of schedule of implementation and/or in terms of program. However they are linked to a CPD global strategy: targets those engineers interested in DPC and enables Ordem dos Engenheiros to promoting CPD at a national level.

2. Regular update of Knowledge and Skills

The proposed CPD system resulted from the analysis of systems in place in several countries and regions where CPD is required or recommended, with adequate adaptations to the Portuguese reality. The main features of the system are:

- A record of professional updating activities developed in successive periods of three years. Assessment of a portfolio containing the updating activities developed in each triennium will be made.
- The training activities in a triennium should have a minimum of the equivalent of 120 hours face to face training. Different training forms are allowed: e-learning, work based learning, project learning, research, etc. A correspondence system will be adopted to measure all of the training activities in face to face hours.
- Ordem dos Engenheiros will decide whether the training during each period of three years should be compulsory or voluntary. In any case the

achievement of reaching a minimum score intends to establish the difference between the updated members and the other members.

3. System of Quality Assurance

To ensure minimum quality levels for the CPD actions two alternatives are proposed:

- a) Accredite each training activity.
- b) Accredite training centres for engineers in CPD.

The authors recommend the second alternative. If adopted this alternative, training centres that are not accredited at a first stage are encouraged to submit their proposals applying to the first approach. These will obtain, in that way, a recognized curricular experience.

The characteristics of these alternatives are the following:

a) Singular training activities accreditation - CPD quality assurance is established throughout a verification process established according to a quality manual to be adopted. The assessment of each proposed training activity will be made by an independent entity to be created by Order of Engineers.

b) Accreditation of CPD centres - The accreditation of CPD centres will follow the EFQM (European Foundation for Quality Management) model, which is adopted by IACEE (International Association for Continuing Engineering Education). This worldwide association has tested and validated the method in various centres of CPD, in Europe and in the USA. This method allows a self-assessment made by each centre which is then validated by the independent accreditation entity created by Ordem dos Engenheiros. It is also proposed that this independent entity can be linked to IACEE for advice and validation procedures. In this evaluation process, each centre will have an evaluation rating ranging from 0 to 1000 points. According to the classification obtained and the threshold level adopted, the centre will be accredited or will be refused.