New Trends on Evaluation and Recognition

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Summary
Accreditation of engineering activities have been analysed considering the classical degrees like bachelor, master or doctorate. The question of continuing professional development activities has been recently addressed due to the increasing importance of the lifelong learning in engineering. These activities become more difficult to recognize when taking the format of distance learning or of elearning. This document tries to present current issues related with informal learning and proposes recommendations for use in the future.

1. Accreditation of Informal and Prior Learning (AIPL) in Engineering

This is a relatively new area where experiential learning can be credited towards a qualification. AIPL seeks to give credit for all learning by placing it within a recognised accreditation framework. It involves the identification of learning wherever and whenever it takes place, selection of that learning which is relevant to a desired outcome or progression route, demonstration of the validity of and appropriateness of that learning, matching learning outcomes to those stated within a chosen accreditation or progression framework, assessment of evidence against predetermined criteria to ensure the validity of the claimed competence and accreditation within an appropriate accreditation framework (1).

The relevant methodologies proposed for accreditation of AIPL are based on performance evidence and knowledge evidence. These evidences are connected with credit units that can quantify the embedment in a framework system enabling a formal partial or total recognition within a qualification framework. This qualification can lead to a degree or to a level of professional recognition. The board in charge of the analysis of the historical evidence and of other proofs of learning should look into authenticity, directness, breadth and currency (2). The approaches based on the workload and on competency-based systems require qualifications to have clear learning outcomes, levels and progression built into them. The learning outcomes act as the basis for the assessment of AIPL and any subsequent award of credits. Different methods exist for this accreditation process including the use of accreditation boards, portfolio presentation or just taking examinations.

The current issue is being addressed by different educational systems either at the national level or at institutional level. The most known is the one envisaged by France that has incorporated the process into a legal framework. The law that establishes the

procedures for universities was published in 2001 and is currently in practice. The issue was discussed in several countries and, for instance, in Portugal it was analysed by the universities in January 2002. The ideas common to this legal support are the validation and accreditation of the recognised progress done outside the traditional educational settings. This legal ground allows a flexible approach using at the same time rigor of procedures and quality of results. The complexity of these processes implies certain prudence in the approach, evaluation of the results and correction of the respective procedures in accordance with the appraisal. In Annex 1 it is included a case study (5) that reflects the case studies of a British and of a French universities.

2. Accreditation of Distance Learning

Taking into account that distance learning is a mode of delivery of lifelong learning where credits gained by distance learning should be linked to clear learning outcomes. Therefore distance learning has no special implications when used in the context of credit accumulation frameworks. The key point is to express the learning in outcomes and engineer workload. The ageing of qualifications is significant in the engineering context of credit accumulation systems where these are time-limited in the sense that outdated qualifications/credits are not necessarily recognised for professional practice or access/exemption purposes.

A credit accumulation system for engineering could be developed and applied to lifelong learning. The system to evaluate these credits could be similar to the ECTS (European Credit Transfer System - europa.eu.int/comm/education/index_en.html) where the paradigm shift from teaching to learning is materialized. The tools used in this system for undergraduate students in Europe can be used for distance learning with a strict quality assurance mechanism. The use of credit-based, modular open and distance learning (ODL) programmes would certainly facilitate the development of qualifications tailored to job functions. This helps in the assembly of courses from the best sources that would certainly contribute to personal development. In-company training should be recognised providing it is rigorous and appropriate to the professional recognition being sought. This type of credit system is compatible with the labour market and with the requirements for professional accreditation (3).

The issue becomes more significant if one considers the continuing professional development of engineers done using any form of elearning. The acquaintance of engineers with the new information and communication technologies is certainly easier and more profound than in other professional areas. That is the reason why the accreditation system based on the evaluation and recognition of the knowledge acquired becomes more important. There have been innovative approaches to this difficult issue taking into account the problems related with major issues like measuring workloads, learning progress, quality evaluation of materials and teaching methods, credit distribution, credit transfer and learning assessment. An example of the lack of response from the traditional educational structures is the initiative from the private sector or from associations. One of the most recent examples is the launching of the ICDE

(International Council for Distance Education - www.icde.org) of an accreditation agency for distance learning and a summary is in Annex 2.

3. Transfer of Accredited Engineering LLL

The question of mobility for engineers and the professional recognition is an important issue. Several initiatives have tried to solve like the Washington accord, the Engineering Mobility Forum (EMF - www.ecsa.co.za/International/EMF/2000/ EMFSecodRevisionMoU.htm) and the World Federation of Engineering Organizations (WFEO - www.wfeo-cee.org) meeting in 13 March 2001 in Paris. These have tried to deal with recognition within certain groups of the professional qualifications for the initial qualifications. These are bilateral or multilateral agreements based on a mixture of initial education and professional experience. The issue becomes more complicated when considering a large influence of LLL. The two main issues with mobility related with LLL are a common measuring method and a recording system of the learning and experience accumulated (4).

Concerning the reference system there is a proposal by IACEE (International Association of Continuing Engineering Education - www.iacee.org) that is based on a system prepared to work on a world-wide basis and it is independent of the educational and of the professional systems in engineering. It contains the description of credit unit measurements of formal/informal training activities, participation in engineering events, publications, articles, work based learning and participation in projects. The summary of the rules for attribution of the international credits of continuing engineering education forms is based presented in annex 3. The guidelines expressed in this text can be extended and adapted to other new forms of learning since these are flexible and comprehensive.

Considering the records of the LLL achievements there are examples like the Diploma Supplement, the Eurorecord and the Europass. The Diploma Supplement is a device to provide information on the nature, level, content, context and status of individual qualifications in order facilitate their fair recognition. The EuroRecord is a development process, supported by a software tool, guidance material and facilitation, which helps individual engineers and other professionals in the engineering industry in recognising their learning through formal education, work-based learning and experience and maintaining an up-to-date CV focusing on their competences and professional strengths, and establishing their professional asset value (5). A description of the Eurorecord (control.ethz.ch/eurorecord) experience and details can be analysed in Annex 4. The Europass (europa.eu.int/comm/education/programmes/europass/index_en.html) is a system adopted in the European Union for recording work-based periods of professional development learning done in countries abroad. The main role of these recording forms is to be included in a credit-based system for recording lifelong learning achievements by creating transparency.

4. References

(1) Challis M (1993), Introducing AIPL, London, Routledge.

(2) Davies P and Feutrie M (2000), Opening Higher Education to New Publics, Porto, Universidade do Porto.

(3) Soeiro A and Gehmlich V (2000), Distance Learning and Life Long Learning, Leiria, Instituto Politecnico de Leiria.

(4) Galvao M and Knudsen I (2000), Credit Accumulation and Transfer Systems, Lisboa, GAERI.

(5) Opening Higher Education for New Publics, Conference of the Portuguese Presidency of EU, University of Porto, May 2000.

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Annex 1

The Accreditation of Prior Learning: From Minority Concern to Majority Interest

Introduction

Education and training is less and less the business of the trainers and the providers and more and more part of a wider set of relationships between individuals and the various stakeholders. It is in this context that the accreditation of prior experiential and work-based learning (AIPL/AWBL) has emerged in a number of countries. AIPL represents a different approach to the relationship between education and training on the one hand and the world of work on the other. Work has increasingly become 'intelligent', involving more complex understanding and a site where knowledge is not only applied but is also produced. We now understand that significant learning takes place at work and in a wide range of voluntary and social activity; that the 'knowledge in action', the way of constructing reality and the modes of behaviour that have been developed in such settings have real value. They therefore need to be formally recognised by the institutions of education and training.

Education has also become an invaluable tool for the management of the professional and social development of individuals. A 'career' is less and less the normal pattern of working life and more and more characterised by breaks – voluntary or compulsory – more or less frequent. What is crucial therefore for an individual is to be able to capitalise on these experiences either outside the company or inside it if it is geared towards the development and recognition of competence.

The Implications for Universities

There are several consequences of this analysis for universities; we explore 4 of these below.

The organisation of AIPL in universities involves a formal acknowledgement across the institution that valuable, significant and relevant learning can take place outside the formal lecture halls of the institution. It means a recognition that the workplace, the family, the voluntary organisation, the sports club can be the site of and the source of knowledge and understanding. This fundamentally challenges the traditional monopoly of the university and its teachers over the production and transmission of theoretical knowledge, since others can now do this effectively. However, it also suggests a new role for them as organisers of knowledge, as professionals who structure, into a coherent form, the diverse and relatively unorganised knowledge and understanding acquired outside the university; it therefore implies a radically new approach to teaching.

AIPL challenges universities to review the content and structure of the programmes of study they offer, particularly those designed for professionals.

The implementation of AIPL leads to the development of new pedagogic strategies. Because the personal and professional background of the participants is unique, because their work situations have generated knowledge and understanding to varying degrees, the university needs to individualise the programmes if it is to offer a programme, which genuinely takes account of that learning. This means that teachers need to mobilise and organise all the available resources to create the most appropriate training experience, and this usually requires them to be freed from the constraints of the courses usually offered to students. To respond effectively to the needs of the participants and to accommodate the restrictions on their participation, means offering a diversity of modes of delivery: courses on site, independent learning, supervision and tutorial support, access to learning resource centres, distance education and so on.

In order to accredit work-based learning a dialogue must be opened with companies and other organisations and with individuals. It requires the university to listen and to understand through appropriate analysis, learning which originates elsewhere. This assumes not only an attitude of openness but also sufficient knowledge about what happens in other organisations to make sense of the voluntary or professional activity. This requires recognition of others – individuals and/or organisations – as partners.

The Experience in Two Universities

Universities in Europe have recognised these changes in their environment and over recent years have developed interesting examples of policy and practice in the field of the 'accreditation of prior experiential learning' (AIPL), as it is known in the UK or 'validation des acquis professionels' (VAP), as it is known in France. The Université des Sciences et Technologies de Lille and City University in London represent two such examples. Clearly they do not represent the complete range of experience, but they are nevertheless interesting case studies of different approaches.

The case of the Université des Sciences et Technologies de Lille

In the mid 1980s the Université des Sciences et Technologies de Lille (USTL) made a strategic decision to adapt its organisation and programmes of study to promote the return of working adults, at any point in their lives relevant to their personal, social and professional needs. This strategy located VAP in a global approach involving the reception, induction, advice, guidance and support of adults seeking to undertake education and training programmes at the university. At the heart of this approach is the individual's 'project'. The definition, mapping out and realisation of this project is developed in a dialogue between the candidate, an adviser and the relevant teaching staff. VAP is one element of this process but a very important one not only in the final project but also in the education and training programme itself.
The main phases of the procedures adopted for VAP are:

a) reception, induction and the initiation of the process

b) development of the candidate's project and discussion of its feasibility
c) choice of the most relevant programme of study
d) preparation of the 'dossier' for VAP if appropriate.

In France, two decrees govern 'validation des acquis professionels': the 1985 decree that authorises the university to admit candidates to a programme of study on the basis of their experience; and the 1993 decree that authorises the university to award part of a diploma on the basis of experience. USTL prioritised the implementation of the 1985 decree that is more flexible and tends to produce more positive results for candidates. In 1999, 926 dossiers were considered under the 1985 decree and 57 under the 1993 decree.

How is this translated into practice?

Under the 1985 decree, candidates receive exemption for certain years or modules. A judgement is made based on the candidate's potential and on his/her capacity to succeed in the chosen course. In order to do this, the candidate's level of responsibility, ability to solve problems, and relevant knowledge and understanding are assessed to ascertain that they are compatible with what is normally expected from those who do hold the required entry qualifications.

Under the 1993 decree, candidates are awarded modules or credits within a diploma of the university. The object here is to identify proximity rather than equivalence. The goal is not for a candidate to have acquired identical knowledge to that which is required of students undertaking the full programme of study, rather it is to check that candidates have mastered the intellectual processes and problem solving capacities that the programme seeks to develop.

Four decisions are possible:

a) candidate's application for VAP is accepted for the programme of study s/he wishes to undertake – the most positive outcome
b) candidate's request is not accepted for the programme applied for but s/he is advised to follow a different programme, in which case a more positive outcome would be likely
c) candidate's request is accepted with certain conditions, for example, to undertake lower level courses, either in advance or in parallel, to update or acquire missing knowledge or understanding
d) request is rejected and the candidate is directed towards other training courses or organisations which offer more appropriate opportunities.

USTL took the decision to create a central committee for VAP, with teaching staff from different departments/faculties to guarantee coherent decisions and to ensure an interdisciplinary approach and consistency of decisions across the university. Alongside these arrangements for VAP, course directors have been charged with adapting and organising their programmes so that they are accessible to people who work. Courses are usually grouped into one day or a half-day to make negotiations with employers and financing institutions easier. Different types of participation are becoming available:

attendance at courses, use of open learning or resource centre, supervision and distance learning. In addition, learning support is offered to those adults who encounter difficulties and/or who request it. The training adviser who helped them formalise their project stays in contact with them throughout their programme of study and beyond. The university is also currently working on developing individualised programmes that do not necessarily follow the curriculum normally offered for a diploma but instead is based on the VAP activity and process. The system is still experimental and at present only applies to volunteer candidates and in programmes where the directors agree to 'play by the rules' of individualisation. This kind of development will lead to a break with the normal rhythm of the university year and to the possibility of entry at different points in the calendar.

The case of City University, London

At City University, ultimate authority to establish and amend the regulations of the University lies with the Senate and all courses must conform to those general regulations. However, each department designs its own courses and is responsible to a central committee which approves not only the content and delivery of the programme of study and the assessment of students but also the entry requirements and arrangements for the accreditation of prior experiential learning AIPL if it is to be used. Once the internal approval processes of the university have been completed, responsibility lies solely with the department to manage the detailed implementation of the approval.

Of relevance to AIPL arrangements, is a rule governing the proportion of students without the 'usual' entry qualifications, who may be admitted to a course. At Masters level this is 25%, although this may be varied via the approval procedures, in certain circumstances. In addition, each course has at least one external examiner, an academic from another university with experience in the relevant field of study, who makes an annual report on the conduct of the course, the standards achieved by the students and the efficacy of the recruitment arrangements (including AIPL procedures) in attracting students capable of succeeding. Within this general framework there is considerable scope for diversity and for constructing arrangements to suit specific target groups - particularly different professional groups and the requirements of their professional associations.

The MSc in Continuing Education and Training

This example is taken from a modular part-time masters programme - the MSc in Continuing Education and Training - designed for adults working in human resource department of companies, private sector training organisations, public sector educational institutions or as independent trainers or training consultants. The course consists of 4 taught modules: one compulsory and the other 3 chosen from (currently) 6 options for a Postgraduate Diploma; students then complete a dissertation for the MSc.

One of the optional modules is a work-based project which can be taken:

- as a project to be conducted during the course supervised by a member of University staff;
- or awarded by AIPL for a project previously conducted independently;
- or partly by AIPL and partly by supervised work-based learning.

AIPL arrangements

Since the target group for the MSc is defined as professionals with several years experience in their field, the approach adopted is designed to be a collaborative, peer group process as far as possible, in which the supervisor's role is to guide, support, facilitate and negotiate rather than to direct.

There are essentially 3 phases in the AIPL arrangements:

Phase 1. Application

Enquiry and supply of detailed information pack

Application including a CV, an organisational chart of the candidate's company and her/his location in it and an outline of the project.

Consideration of application by 2 members of staff from the course. At this point a preliminary judgement is made about the extent to which the candidate is likely to be able to claim the whole or only part of the module by AIPL and the work (if any) required to complete. A supervisor with relevant experience is allocated to the student who formally enrols as a student of the University (if not already done so). Interview with the supervisor to negotiate and agree with the candidate, the scale, scope, depth and breadth of the project and the amount of credit to be awarded, and to provide guidance and advice on any further work based activity needed and on the preparation of the portfolio

Phase 2. Portfolio preparation

Candidates are required to assemble a portfolio for assessment including:
- an organised concise account of their chosen project
- extracts from relevant documents to illustrate and support the account
- a letter of confirmation from employer or line manager confirming the student's role in the project.

Tutorial support: each candidate has an entitlement to a minimum of 2 hours and a maximum of 9 hours individual and group tutorial support. This varies according to the 'readiness' of the candidate, the amount (if any) of further supervised work based learning to be conducted, and the amount of credit to be awarded. Interim assessment: the supervisor and one other member of staff together use the portfolio to assess the independent learning which has taken place. The student will be required to pass this interim assessment before proceeding to the case study and viva.

Phase 3. Completion

Case study: students are given a case study of an organisational development strategy or HRD project of a similar kind to their own but in a different setting to give them an opportunity to demonstrate that they are able to effectively transfer their knowledge and understanding to a different context (a key skill at masters level). They are given 7 days to reflect on the strengths and weaknesses shown in the case study.

Viva: the viva is a formal meeting between the student, the supervisor, one other member of the course team, and a external professional from the relevant field of practice. The student: presents the portfolio, engages in a discussion about his/her learning, and responds to the case study. If the student performs satisfactorily, the supervisor recommends to the Course Director that the student is awarded the module.

Formal award: formally all awards of modules, courses, diplomas and degrees are subject to the approval of the external examiner for the course.

Similarities and Differences

A comparison between the systems in France and the UK makes it clear that over and above the differences in the organisation and functioning of universities there is considerable convergence in the way in which AIPL or VAP has been developed in terms of the actors and the procedures involved. Nevertheless there are differences that reflect the strength of the cultural traditions of each education system. But these differences are not so important that they constitute an obstacle to shared understandings and practice or to the development of a European perspective.

Similarities in procedures:

In both cases the focus is the accreditation of experience, in order to facilitate participation in education and training leading to a university diploma. Both take into account personal and work experience – the focus is on the totality of experience; voluntary and family activities are taken into account alongside professional activity. Two kinds of AIPL/VAP exist – one that facilitates access to programmes of study by exempting candidates from the qualifications normally required for entry – and one that facilitates the award of modules or parts of a diploma and thus shortens the course.

Procedures involve similar phases: reception, induction and advice on the development of a project; support for the development of a portfolio; decision-making and evaluation of the dossier. In both there is considerable emphasis placed on advice, guidance and mentoring alongside encouragement to the individual to take responsibility for his/her own project.
Similar organisational arrangements have been put in place, adapted to the particular situation of each university.

Similarities of actors:

In both cases continuing education services or departments have a driving role in the development and implementation of arrangements. AIPL /VAP developments have been led by individuals who have a clear vision of the university of the future. AIPL /VAP involves actors responsive to the needs and experience of different kinds of students. Those in favour of AIPL/VAP confront similar obstacles and difficulties in persuading their colleagues to take into account skills and experience gained outside formal education and training.

Nevertheless there are differences:

There are no legal statutes governing AIPL in the UK, the opposite is the case for VAP in France.
There is a greater emphasis in the UK on the attempt to extract knowledge and understanding equivalent to the academic learning outcomes. In France the emphasis is more on the candidate's problem-solving ability, ways of thinking and reasoning skills. There are differences in the concepts which underpin the practice. AIPL arrangements in the UK tend to be more cautious and require more concrete proof than those for VAP in France. The dossier required in France tends to be much smaller than the portfolio required in the UK. In the UK there is usually a clear line drawn between the time, place and the people involved in the development of the portfolio and those involved in the evaluation of it. This is not the case in France.

There is no minimum length of experience required of candidates in the UK, but usually instead a minimum age. Also the part of diploma that can be awarded by AIPL does not normally exceed 50%. In France at the present time the minimum length of experience required is between 2 and 5 years depending on the decree and the whole diploma, except one module/unit, can be awarded by VAP.

The Future

Although institutionalised AIPL/ VAP arrangements are still uncommon in most universities, developments are taking place in many countries. These are frequently local initiatives created by teaching staff, teams or departments for their own students. Often the university has little or no knowledge of the practice and the impact on potential candidates or on businesses is limited. However, today the challenges are such that they require global responses from institutions of higher education, both in their mission statement and in the way their programmes and diplomas are organised and delivered.

The challenges:

The university must institutionally acknowledge that valuable learning can take place in action, outside the formal learning situations they offer; that the world of work, the family and voluntary activity can also be places of learning. The university must learn to 'read' experience based knowledge that is not presented in disciplinary forms in order to

understand how candidates organise and mobilise their knowledge. In the process of AIPL/ VAP candidates become actors in their own evaluation and the dossier that forms the basis of the evaluation depends partly on the quality of the relationship between the individual and the institution.

AIPL/VAP requires the university to question the way it makes its body of knowledge and expertise available. Since knowledge is increasingly easy to access outside the university and many situations are learning situations, should the university not become a place to structure, organise and formalise knowledge acquired in a more unorganised way? Should the teaching methods be reviewed?

AIPL/VAP prompts the university to review the content of programmes of study and diplomas. Are they defined in terms of objectives and learning outcomes? Or do they consist largely of lists of contents linked to the availability of teaching staff? What is the place of interdisciplinary and transversal approaches? How do theories articulate with practice? How innovative and relevant is the content? In order to make AIPL/VAP possible, the university also needs to divide up programmes of study so that parts can be awarded since long course make validation/ accreditation difficult. Courses also need to be described in ways thath make it possible to compare experience with the learning expected in the academic situation.

AIPL/VAP is a period of self-reflection and self-analysis that helps candidates to become aware of what they know and what they can do but also what they still need to learn. Teaching staff needs to provide programmes of study relevant to these individual needs, which may mean a fundamental change to traditional arrangements and pedagogy. Finally, AIPL/VAP necessitates interaction with businesses and a range of different institutions and individuals. The university needs to adopt a listening mode to understand different organisations and different work roles and functions so that it can draw out the best from candidates. This presupposes openness and a receptiveness that will inevitable impact on external relations more generally. But the university remains in charge of its operations: decisions to admit candidates or to award parts of a diploma by AIPL/VAP remain in the hands of the universities' own committees.

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Annex 2

Launching the ICDE Standards Agency

Need for an international quality standard in Open distance and e-learning

The issue of quality and standards in distance and e-learning are at the centre of debate and development in the field of distance and virtual learning today. Internationally there has in recent years been an increasing need for the creation of a quality standard in open distance and e-learning.

For organisations engaged in ODL and particularly those where no national standards presently exist - it is of great importance that such an international and credible quality standard is offered. It is equally important for students, their sponsors and those who fund this sort of education. The award of such an international quality standard would be a demonstration of accepted and acceptable standards throughout the world.

For a good number of years, the ICDE has been encouraged by members and partners to become involved in quality assessment and quality audits. ICDE, being the world membership organisation of open, distance and e-learning providers, embraces in its global membership most leading providers of open distance and e-learning in the world.

Under the auspices of a group of some of the leading experts in Open distance and e-learning, an international standards system for assessing quality in open distance and e-learning has now been produced, and a full process for undertaking quality audits of open distance and e-learning institutions and systems established, namely the ICDE Standards Agency (ISA).

The ISA is now available for undertaking quality audits and providing advice on quality and development issues to institutions, organisations, governments and corporations world-wide. The ISA will operate on a commercial basis and will involve leading experts in open distance and e-learning from the ICDE member institutions and others around the world as quality auditors and consultants.

The ISA will be working in co-operation with ICDE as well as using experts from the ICDE membership. The quality audit group will involve experts from ICDE member institutions, based on qualifications and ODL experience.

The Mission of the ISA

The mission of the ICDE Standards Agency, hereafter referred to as the Standards Agency, is to promote public confidence that the quality of provision and standards of awards in Open Distance and Virtual Education are being safeguarded and enhanced. To

this end, the Standards Agency carries out quality audits of the performance of institutions. This process of international institutional quality audit has been developed by the Standards Agency after assessment of standards in Open Distance and Virtual Education throughout the world, and represents an international standard for quality.

The Quality Audit Process and Procedures

Institutional quality audit is not a process for assessing the academic content or academic level of programmes. (There are no internationally agreed or applicable standards for academic content and level.) Rather it is a process that pays due attention to the quality of programmes and the standards of awards at the point of delivery, as well as to institutions' ultimate responsibility for what is done in their names and through the exercise of their formal powers. It is an evidence-based process carried out through peer review, and balances the need for publicly credible, independent and rigorous scrutiny of institutions with the recognition that the institutions themselves are best placed to provide stakeholders with valid, reliable and up-to-date information about the quality of their programmes and the standards of their awards. At the centre of the process is an emphasis on students - in terms of the quality of the information they receive about their programmes of study, the ways in which their learning is facilitated and supported, and the academic standards they are expected to achieve, and do achieve in practice.

ICDEs institutional audit process assumes that institutions will be operating within the overall national and/or state legislation and guidelines, which are applicable to them. The ICDE Standards Agency is the sole owner of the intellectual property rights to the ICDE quality standard in open distance and e learning. The services of the ISA are now available world-wide. On an interim basis, all requests for assistance and co-operation with the ISA should be directed to: Admin@icde.standardsagency.org

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Annex 3

ICU – The Credit Unit of the IACEE (International Association for Continuing Engineering Education)

The definition of ICU by IACEE [www.iacce.org] corresponds to the need of engineering professionals to face the challenges created by the obsolescence of engineering knowledge. It is important to guarantee the required competency of an engineer to perform its job. The adoption of an international benchmarked unit helps the public service, the employers, the changes in career and the quality of engineering profession. The current rules for the ICU - IACEE Credit Unit for Continuing Engineering Education (CEE) can be summarised as follows:

a) CEE is any form of learning or training taken after the graduation as engineer.

b) The total number of credits expected per year of CEE for any engineer is six.

c) ICU is attributed to formal training, attending conferences, presenting papers, publishing papers, work based learning and elearning.

d) One ICU corresponds to six hours of face-to-face training with evaluation and to twelve hours without evaluation.

e) One ICU corresponds to twenty-four hours of conference or meetings accredited by an official engineering board.

f) Two ICU corresponds to a published paper in an engineering reviewed journal.

g) Half ICU corresponds to a paper in a conference or meeting accredited by an official engineering board.

h) Correspondence of ICU to work based learning and to elearning is evaluated as prescribed in guideline d) if that learning is accredited by an university.

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Annex 4

Case study:

EuroRecord
Empowering Professionals to Recognise and Record their Learning

Individual commitment to lifelong learning is increasingly recognised as a key for improved business performance for employers and career progression for individuals. Continuing education therefore needs to be based on an *individually driven* education system – or rather "learning system" – where individuals have *learning agreements* with a variety of parties, including their employer, their professional body, and different academic and other providers. This requires a common language and currency both to improve communication and coordination between the partners, and to enable individuals to achieve *coherence* in their overall learning plans and activities.

At the same time, the growing awareness and recognition of the need for lifelong learning create a demand for greater transparency of qualifications, competences and achievements across corporate and national boundaries. Competence is the characteristic of an individual: the knowledge, skills, personality traits and attitudes – integrated through (work) experience – needed for successful performance. Individuals thus need to take responsibility for their own learning, for identifying development needs and taking the necessary action.

The EuroRecord – European Record of Achievement for Professionals in the Engineering Industry – has been developed in response to the above needs. The EuroRecord brings together the different elements of competence analysis, focusing on generic rather than functional competence, and does so on a genuinely European basis. Thus it provides, in a single tool, a comprehensive record of professional learning, transparent across markets. As such EuroRecord seeks to become the *de facto* European standard for recording such learning in the engineering industry.

The EuroRecord

a) gives individuals a tool that empowers them to take *ownership* of their own professional development
b) is a *competence* tool, focusing on *what* the professional learns, not *how* it has been learned
c) provides a *generic framework* to describe professional competence in a transparent, transferable way, but it is *not prescriptive* of the competences an engineer should or should not have

Benefit for professionals and their employers

The EuroRecord is a development process, supported by a software tool, guidance material and facilitation, which helps individual engineers and other professionals in the engineering industry to:

a) recognise their learning whenever and however it has taken place – through formal education, work-based learning or experience
b) draw up their career and competence development plan
c) prepare for applying for a job or for being promoted
d) maintain an up-to-date CV focusing on their competences and professional strengths, establish their professional "asset value" for themselves, their employer or their profession
e) provide evidence of their professional development to meet the requirements of a professional body or of external regulations
e) satisfy their career and personal goals and improving the balance in their life.

For companies and other employers the EuroRecord can support internal professional development. By stimulating and supporting the recording of employees' learning, the EuroRecord offers organisations a comprehensive, up-to-date and easily accessed record of the competences of professional personnel. The EuroRecord helps to:

a) target Human Resources development and training with greater precision
b) save time and money in internal promotion issues
c) benchmark competences across company's international divisions
d) allocate the right personnel on projects

Description

EuroRecord is a software-based tool for the individual recording of professional achievement. It has been designed for the engineering industry to enable professionals to record their learning, however achieved, and to plan their continuing professional development. It is applicable across Europe and constitutes the first portable professional record of its kind. The individual user enters details of his or her learning into the EuroRecord. This information may relate to formal structured learning such as university degrees or professional qualifications; it may relate to skills acquired through on-the-job training; it may relate to personal knowledge and competence developed through work and non-work experience.

The EuroRecord tool consists of three sections, each of which has a specific character and purpose. Learning activities are entered in the Activity Log. For example, formal qualifications and continuing professional education can be recorded, but also less structured, experiential learning activities, for example taking charge of an important work project, or committee membership of a professional association. The important thing for the user is to reflect upon the activities and to record those that contribute to his or her learning.

While the Activity Log captures the learning the user has achieved, the Competence Profile describes the outcomes of that learning – what the user knows and can do. This section is the core of the EuroRecord and is supported by a comprehensive Competence Framework. The framework provides a structure, a classification for the competences the user might want to include in his or her profile. It has been developed to be applicable across the engineering profession throughout Europe. By providing a framework for describing all areas of competence relevant to professionals in the engineering industry it also provides users with "the complete picture" of professional competence, making it easier to identify areas of expertise and, even more importantly, areas of competence that need to be developed.

The user who completes and maintains the Activity Log and Competence Profile has already gone through a powerful self-assessment process. This information can now be used to draw up a Learning and Development Plan. Supported by a record of learning activities and a detailed breakdown of competences, the user can identify targets for personal and professional development and career achievement. This part is particularly valuable if used in consultation with mentors or other advisors.

Together, the three sections of the EuroRecord constitute the user's professional record of achievement. Part of the power of EuroRecord, however, is that it is more than just a personal self-assessment or self-development tool. It can also constitute a public record of the user's learning, skills and personal competences, which can be made available to the wider world of the organisation and the professional sector. Thus the EuroRecord enables the user to create personal profiles focusing on specific aspects of their professional competence and the key areas of expertise and achievement which are of value to their colleagues, their employing organisation or to potential employers. These Unique Specialist Profiles present the distinctive "selling points" of the user as a professional.

How is the EuroRecord offered to clients?

A consortium of European universities, companies, professional and trade union organisations and continuing education networks has developed the EuroRecord. The development project has been partly financed by the European Union Leonardo da Vinci programme. The EuroRecord software tool and the supporting documents have been released into the public domain. Anyone can thus download them for free from the web (http://control.ethz.ch/eurorecord/).

However, the process of analysis and reflection on professional learning and competence supported by the EuroRecord is not easy. To get the best out of this powerful tool, appropriate introduction and familiarisation are essential. The EuroRecord is therefore introduced to clients through a Facilitation Workshop. Users, who wish to start using the tool –whether they are nominated and sponsored by their employer, attending a continuing education programme or in the process of looking for a job –, attend a workshop. During this event, the EuroRecord is introduced and its application in

recording and planning professional development is explained. The workshops also give hands-on training in the use of the software tool.

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Employing organisations are also given advice on the optimal use of the EuroRecord among their professional staff. In particular, managers will want to consider issues such as the provision of mentoring for staff to support the personal development intrinsic in the EuroRecord. Lifelong learning is a partnership from which both individual and corporate partners can draw significant benefits. The EuroRecord can be a central tool in that partnership. The EuroRecord is primarily based on self-assessment, even if users are encouraged to use the tool in dialogue with their line manager, a mentor, career adviser or some other external support person. This is of particular importance in the early phases of using the tool, as it helps the user in the process of reflection and awareness, which is unfamiliar to many professionals who are conditioned by our educational systems to teacher-led learning activities. Also in drawing up the learning and development plan, dialogue is crucial, as an effective professional development plan needs to integrate both personal and organisational objectives, and its implementation is often dependent on resources that need to be provided by the employer or some other organisation.

Conclusion

The EuroRecord has been developed for the European engineering industry and in the course of the development work, pilot test have been carried out in some ten countries. These have shown an overwhelming acceptance of the basic concepts, both within the primary target group of engineers in industry, but also more widely. A wide range of applications are being considered, ranging from its use to support annual appraisals or applying new competence-based pay schemes in companies to redesigning undergraduate engineering programmes and helping undergraduate students take ownership of their own learning. As it stands, the EuroRecord tool is applicable for any branch of engineering. The design of the software and of the competence framework makes it generic and easily adaptable to other professional areas. Discussions have already been launched about applying the EuroRecord to the health care, human resources development and other professions.