

Leonardo da Vinci Programmes - Tools for Improvement of Construction Managers Mobility across European Union

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Abstract

The authors discussed issues connected with accreditation of Continuous Professional Courses (CPD), certification of managers in construction and mutual recognition of qualifications of construction managers in European Union. The Institute (ICEM) was the Promoter of several LdV projects: finished in 2002, the LdV Didactic project titled: “Development of New Type of Studies and Courses in the Field of Management in Construction for Engineers According to Requirements of European Union”. Two next projects were finished in 2004: “Model of Professional Qualification Structure and New Methods of Promotion, Certification and Mutual Recognition of Managerial Skills in Construction Industry According to the Requirements of EU” - connected with creation of tools for transparency of the construction managers qualification in Europe and “Improvement of the Linguistic Skills of Polish and Portuguese Construction Managers and Engineers - Recognition of Needs and Preparation of Courses in "Construction English Language"” - connected with improvement of English language skills among construction industry employers. Nowadays the Institute is the Promoter of the LdV project titled: “Recognition of needs and creation of the professional training in the area of preparation and management of infrastructure construction projects financed by the European Union”. The main goal of all of these projects is to increase employment capabilities of Polish, Lithuanian, Spanish and Portuguese engineers and managers at construction market of enlarged European Union.

Keywords: Management, construction, qualification, mobility, English language courses.

1. Leonardo da Vinci Didactic Project (2000-2002)

LdV Didactic project helped to prepare the proposal of the Polish system of qualification certification of the managerial construction personnel and accreditation of the studies with the participation of construction employers. Project Partners (Institute of Construction Engineering and Management - the Promoter, PL, Polish British Construction Partnership Ltd., PL, Construction Management Education Foundation, PL, European Construction Ventures Ltd., UK and Minho University, PT) assumed that this system has to assure the full clarity and recognition of the profession qualifications in construction with similar systems applied in the EU. Main tasks realized by the project's Partners were:

- the recognition actual educational needs and raising of building personnel qualifications in terms to enter on investment-building market;
- the preparation of verification model and acceptance /certification/ of qualifications of building staff, within non-governmental building organisations (municipal, employers and associations' activity);
- the elaboration of learning programmes and systems for complementary studies for graduates at technical universities, with reference to 5 modules of specialisation under the formula of distance learning;
- the comparative analysis in order to establish the comparative norms for qualifications in the countries participating in the programme.

The qualification model distinguishes 5 different types of organizational units, which are present on the construction market and 5 different personnel qualification profiles:

- engineering of production processes (the material and construction products industry),
- engineering of building processes and building site,
- engineering of investment processes,
- management of the construction company,
- real estate management.

Table 1 presents Specializations and relevant disciplines of knowledge in management in building industry, disciplines, which has to be study by construction managers. An example model of postgraduate studies complementing construction faculties' graduates with the knowledge from the field of management was worked out with respect to the following assumptions:

- the model was created for graduates of KBI specialisation (KBI – Konstrukcje Budowlane i Inżynierskie - Building and Civil Engineering Structures) as the most numerous group of construction graduates.
- graduates of other specialisation (IPB – Inżynieria Produkcji Budowlanej - Construction Management and Technology, TOB – Technologia i Organizacja Budownictwa - Technology of Construction Management, names of specialisation may vary on different universities) might not be obliged to learn some of the modules that were passed during their studies, but first is has to be accepted by Accrediting and Certifying Body.
- graduates of other faculties (as Architecture or Environmental Protection) will be obliged to study some additional modules (also connected with technical knowledge) which Accrediting and Certifying Body will indicate. The basis and assumption for creation of such a “body” was the subject of works under the LdV Certification project.

Table 1: Specializations and relevant disciplines of knowledge in management in building industry

Disciplines of knowledge Specializations		1	2	3	4	5	6	7
		Technical disciplines in the building industry	Humanitarian welfare in the building industry	Instrumentation of a system	Technology of systems	Organization in the building industry	Systems control in the building industry	Economy of systems in the building industry
1	Engineering of production processes	Building materials and products	Ergonomics	Mechanization and automation of production	Production technology	Organization of production	Production control	Economy of production
2	Engineering of erection processes of structures	Building and engineering objects	Safety of work	Mechanization of construction work	Technology of construction	Construction planning	Construction management	Economy of construction
3	Engineering of building – investment processes	Building investments	Ecology of building investments	Investment appraisal, planning and building control approval	Investment appraisal, funding and procurement	Organization of investment ventures	Running an investment	Efficiency of an investment
4	Company management in the building industry	Marketing in the building industry	Human resources management	Technical resources management	Production and services management	Organization of company management	Strategic management	Financial management
5	Real estate administration	Design and performance of real estate	Ecology of real estate	Safety of the technical facilities	Technology of real estate operation	Organization of real estate administration	Real estate administration	Economy of real estates

2. Leonardo da Vinci Certification Project (2001 - 2004)

During the first LdV project Partners decided that set of learning subjects and new specialisations of study has to be recognised and accredited by European accreditation bodies. LdV project facilitated such an accreditation by creation of the relevant procedure (applicable to Poland and to Portugal). Also special procedure for certification of construction managers was created and Construction Engineering and Management Institute at WUT (the Promoter) was accredited (for three years) by well known European organisation associating large number of construction managers - Chartered Institute of Building (CIOB) from United Kingdom – Partner in the project. (other Partners were: College of Estate Management, Reading, UK, Polish British Construction Partnership Ltd., PL, Construction Management Education Foundation, PL and Minho University, PT).

Partners of the project fulfilled, among other, the following tasks:

- creation of a guidebook for a comparability of all components of certification and accreditation systems in the form of curricula-qualification modules. These modules describe content-related qualification requirements.
- creation of uniform certification criteria of managerial qualifications and accreditation of studies, preparing to fulfil managerial functions in various areas of construction industry and different levels of required qualifications, preparation of uniform and detailed conditions and procedures of managerial skills certification and accreditation of studies assuring these qualifications, which are necessary to establish an organization called “Polish Association of Building Managers”, that will conduct and coordinate process of certification and accreditation at European scale. This important for construction industry in Poland organisation was (April 2004) registered by the relevant court in Poland. Soon it became a member of AEEBC - Association d’Experts Europeens du Bâtiment et de la Construction – European Association of Building Surveyors and Construction Experts.

The project aimed at setting a common transparent European model of professional qualifications for construction management staff. The project proposed a consistent and self-evident comparative system of professional managerial qualifications in the construction industry in European Countries. Construction managers should possess interdisciplinary skills required for independent entrepreneurial activity (technology, organization, economy, management, sociology, administration and law). The present limited potential of companies does not allow the employment of staff with higher education in interdisciplinary knowledge. (Information about the project at: <http://www.il.pw.edu.pl/~iipbiz/leonardoIII/main-eng.htm>).

Contents of curricula are influenced by SME’s and social partners. The project provided mutual recognition of professional qualifications; therefore will create access for construction managers to the European labour market. Accreditation of courses will ensure transparency and complementary values for initial courses of CPD (Continuous Professional Development). Development of professional CDP courses in the area of management in construction is the subject of the Leonardo da Vinci Managerial project.

3. Leonardo da Vinci Managerial Project (2004 - 2006)

During the Project, The Project Team (Institute of Construction Engineering and Management, the Promoter, PL, Polish British Construction Partnership Ltd., PL, Polish Association of Consultants, PL, Minho University, PT, Valencia University, ES and Vilnius Gedyminas University, LT) will create curricula, methodology and teaching materials for chosen CPD courses in the area of preparation and management of infrastructure projects.

Project has started with the partial recognition and confirmation of training needs among Spanish, Polish, Portuguese and Lithuanian construction industry personnel, and employees of public authorities. Special

WEB site (look at: <http://www.pbcp.com.pl/manag/manag.htm>) for the project was created for: organisation of the questionnaire, gathering the responds from future participants of the courses, and for dissemination of the results of the project. Methods of preparation of the infrastructure projects as well as managements procedures in construction in Spain, Poland, Portugal and Lithuania will be analyzed compared and described. The Project Team will create curricula, methodology and teaching materials for chosen CPD (Continuing Professional Development) courses in the area of preparation and management of infrastructure projects. There are short trainings for the future tutors of the courses foreseen, as well as preparation of the test courses (for checking the quality of prepared materials) foreseen. Project Partners also agreed to create basis and assumptions for internet platform, which will facilitate operations of construction engineers and managers on building site.

4. Leonardo da Vinci Linguistic Project (2001-2004)

In recent years the number of international investments in the construction sectors in Poland and Portugal has increased significantly. There is a need for an improvement of English language skills among Polish and Portuguese personnel working in the construction industry, as well as among students of Civil Engineering Faculties and didactic staff. Additionally the Polish language education system suffers a lack of trained tutors in the English language. The Project Team (Institute of Construction Engineering and Management, the Promoter, PL, Polish British Construction Partnership Ltd., the Co-ordinator, PL, National Chamber of Construction, PL, Polish Agency for Entrepreneurship Development, PL, Minho University, PT and English Language Training Centre at Manchester University, UK) created detailed curricula and methodology for both technical and managerial English courses. The different types of courses were created, depending on the competence levels of construction industry employees:

- **Intermediate courses:** aimed at the level of foremen in industry, and at the level of students from Technical Universities. There are two intermediate courses created:
 - “Technical English for Construction” and
 - “Principles of Management in Construction”,
- **Advanced courses:** aimed at engineers and managers from industry, including representatives from Small and Medium-sized Enterprises, and didactic staff at Technical Universities. There are six advanced courses created:
 - “Procurement and Tendering Procedures”,
 - “Joint Ventures and Partnering”,
 - “Cost Management”,
 - “International Contract Procedures”,
 - “Marketing in Construction” and
 - “Quality Management in Construction”.

It is assumed that all participants of proposed training courses should have some basic knowledge of the English language. The structure and format of the courses was developed on the basis of co-operation between the construction industry and Technical Universities, with close co-operation with number of EFL (English as Foreign Language) and ESP (English for Special Purposes) experts from Universities (Warsaw University of Technology, University of Minho and University of Manchester) Language Training Centres. The project concluded with the creation of material (basis and structure) for Portuguese – English, and Polish - English dictionaries, in the field of technical and managerial construction terminology. The dictionary will consist of: English word or phrase, English definition of the word or phrase, and finally the Polish and Portuguese translation. A better knowledge of the English language will facilitate mutual recognition of qualification and future international certification of Polish and Portuguese construction engineers. (See more at: <http://www.il.pw.edu.pl/~iipbiz/leonardo/main.htm>).

5. Conclusions

The main results of the projects, presented in the paper, are:

- recognition of applied systems of education and formulation of complex structure of managerial knowledge in construction
- the recognition of needs for managerial qualifications of construction personnel (on the base of the questionnaire and Focus Group meetings with representatives of Civil Engineering Faculties from Poland and Portugal),
- methods of accreditation of courses and certification of the construction managers in Europe,
- assumptions for creation of the set of textbooks for “Construction Manager Library”,
- set of curricula’s for studies in Poland and Portugal, for construction engineers and managers,
- programmes and didactic materials for English language courses for construction engineers and managers.

All the results will lead to mutual recognition of managerial and linguistic skill of construction engineers which enhance significantly employment possibilities in European Union.

6. References

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