

Analysis of the Educational Offer in Building Technology and Management

Andreea-Terezia Mircea

Department of Civil Engineering and Management
Technical University of Cluj-Napoca
Cluj-Napoca, Romania

Abstract—Intending to investigate the challenges that have emerged in the Building Technology and Management area, as well as to promote the development of Master's degree programmes which can be able to sustain the preparation of competent specialists who will easily adapt to the new market demands, a research on Educational marketing was conducted during the 2011-2012 academic year. As part of the research, a set of specific questionnaires used as an instrument of surveying was distributed to final-year students, representing university graduates from both Bachelor's and Master's degree studies. This Paper presents an analysis of the Educational Programmes offered to Bachelor-graduate students from 'Civil Engineering' and 'Engineering and Management' lines of study. The obtained data and information according to the survey are meant to be taken into account during the periodical curriculum review of the Programmes.

Keywords—Educational Programmes, Master's degree studies, Survey, Questionnaire, Building technology and management

I. INTRODUCTION

The present global context put the construction business world in front of some very complex situations characterized by many interdependencies. In recent years the construction sector, as one of the most dynamic and flexible economy sectors, has faced some constraints caused by its structural reform process. At the same time the real estate market has experienced a rapid growth, including a constantly expanding of the private segment.

In this context, the continuous education is very important and a special accent has to be placed on Building Technology and Management with direct application in the construction activity.

In order to activate efficiently, Engineering graduates need to be rational and pragmatic, interested in the practical steps necessary for a concept to become reality [1]. So, the educational offer in Master's degree programmes has to be interdisciplinary oriented towards to the socio-economic needs and should be harmonized with the international tendencies.

Each Master study programme is distinguished by its own objectives and mission, which are defined in accordance with the requirements of future employers and market demands.

Consequently, the universities' educational offers have to be adapted to the requirements of the national and international labour market. In this aim, the major coordinates of the Educational programmes in Building Technology and Management are to:

- Familiarize students with models, methods, modern techniques and special technologies applicable to real estate and construction industry.
- Increase creativity through research programmes and to promote a clear exchange of ideas, knowledge and experiences.
- Develop students' ability to design technologies and to make decisions by acquiring theoretical concepts and their application into practice.

The general objectives of the Master's programmes are to:

- Carry out performant University educational activities, which shall be competitive on the European and international level.
- Implement attractive courses and activities in order to absorb Bachelor-graduates.
- Elaborate educational programmes adapted to the society's demands as well as to the competitive business environment.
- Acquire the necessary skills as required by the labour market.
- Increase the understanding, awareness, and creativity in Building Technology and Management of the Master's degree students.
- Improve the lifelong learning.

The main propose of Master Studies is the development of specific competencies necessary for research activities.

Master's degree programmes intend to ensure students to:

- Improve knowledge and develop competencies in their Bachelor's degree studies area or in related fields.
- Achieve complementary competencies to those who have Bachelor's degree studies in other areas.

- Develop approach capacities in ongoing research activities.

Faculty of Civil Engineering at the Technical University of Cluj-Napoca develops three lines of study, providing seven specializations within Bachelor’s degree (four year studies), and eight in Master’s degree studies (two year studies).

The Master’s degree programmes subject of the research on Educational marketing, “Special Engineering Technologies” and “Project Management & Property Evaluation”, are intended for Bachelor-graduate students in engineering, architecture or in related areas.

The aim of these Master programmes is to form professionals with competencies in the fields of study, which shall be able to adapt to the European as well as to the global competitive environment.

II. DATA AND INFORMATION ACCORDING TO THE SURVEY

The survey, conceived as a strategy of investigation, was carried out during the 2011 - 2012 academic year, with the intention of getting a more detailed perspective on how the future graduates perceive the Master’s degree programmes.

The instrument used for data collection contained questions and structured interviews in order to facilitate the gathering of information meant to be taken into account during the periodical curriculum review of the Programmes.

As board member of the committee that initiate the University Master’s degree programmes: “Special Engineering Technologies” and “Project Management & Property Evaluation”, I have developed a questionnaire that was distributed to all final-year’s students who represent the second generation of graduates of those specializations.

A set of specific questionnaires was distributed also to Bachelor’s degree graduated students from “Civil Engineering” and “Engineering & Management”, who represent the main selection base for these Master’s programmes.

Bachelor-graduates’ further intention to study at Master’s degree programmes are presented in Fig. 1, as follows:

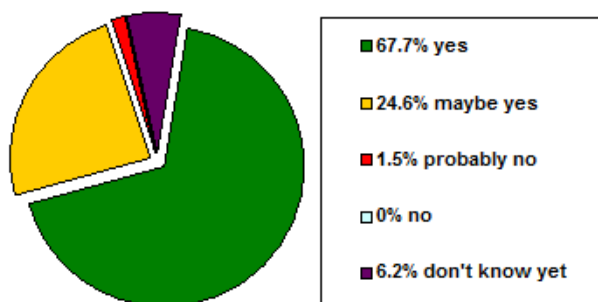


Fig. 1. Respondents’ intention to study at Master’s degree programmes.

The most requested Master specializations, according to the participants at the survey, are shown in Fig. 2:

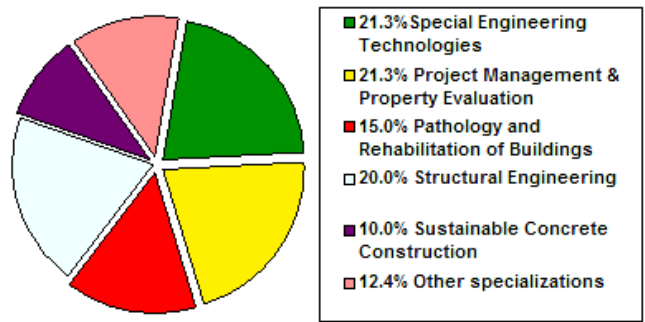


Fig. 2. The most requested specializations at Master’s degree studies.

The answers regarding the courses considered to be important and useful in the curriculum of the Bachelor’s programmes are distributed as presented in Fig. 3 [2].

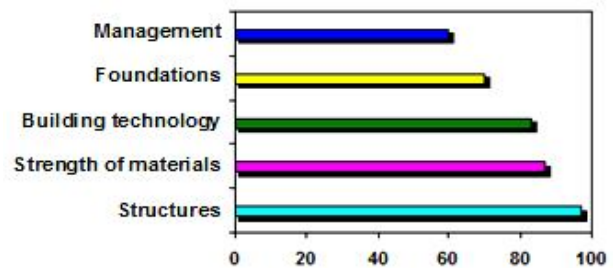


Fig. 3. Courses considered to be important and useful by the respondents.

The opinion of Bachelor students on the subject areas that they would have liked to study more during the specialization is presented in Fig. 4.

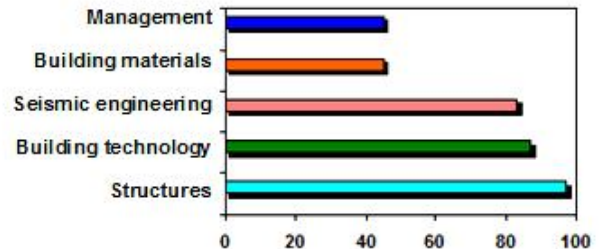


Fig. 4. Subject areas that students would have liked to study more.

According to Master students, Fig. 5 shows the answers regarding the courses considered to be important and useful in the curriculum [3].

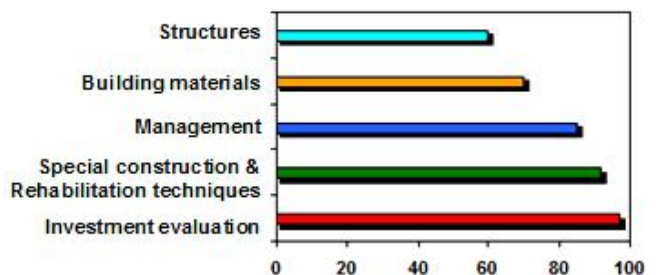


Fig. 5. The opinion of Master students on courses considered to be important and useful in the curriculum.

The usefulness of further Master's degree studies, according to the Bachelor-graduate respondents' opinion, is revealed in the chart from Fig. 6.

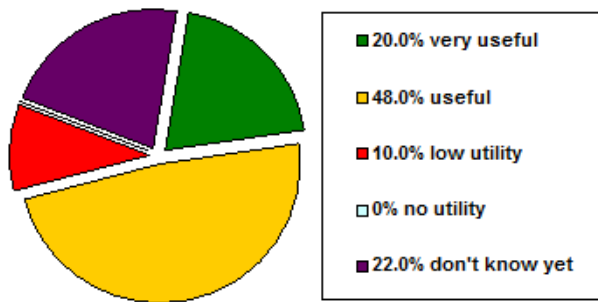


Fig. 6. The usefulness of further Master's degree studies, according to the respondents opinion.

The intention of Bachelor-graduate to continue their Master's degree studies and to work at the same time is presented in Fig. 7:

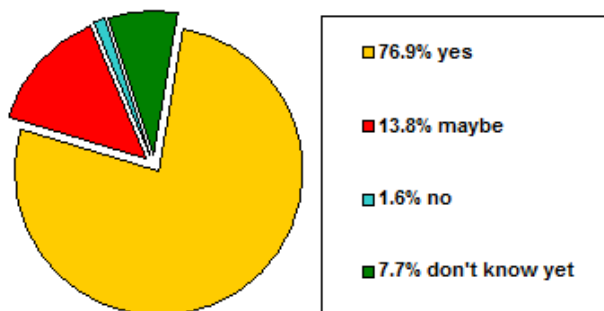


Fig. 7. The Bachelor-graduate respondents' intention to continue their studies as well as to find a job.

The favourites fields of activity where Bachelor-graduate would like to work are shown in Fig. 8:

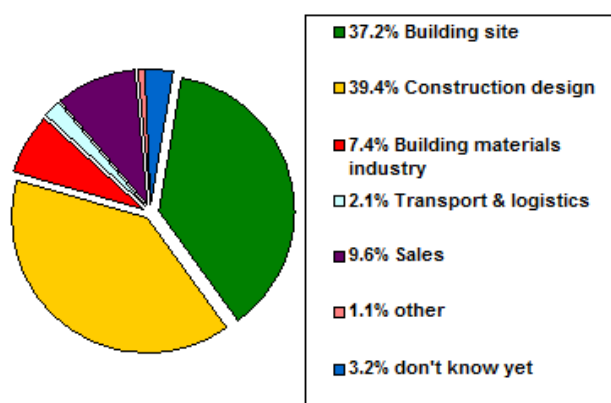


Fig. 8. The favorites fields of activity.

Main expectations towards the company management, working team and job-tasks of an ideal workplace are resumed as following:

- Company management should be: fair, equitable, understanding, communicative, conscientious.
- Working team should be: friendly, supportive, hardworking, promptly, cohesive.
- Job-tasks should be: clear, proper planned, suitable realistic, creative.

The distribution of Bachelor-graduate students' responses with regard to the work schedule at an ideal job is highlight in Fig. 9:

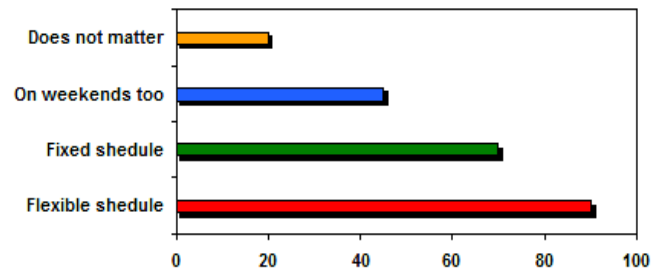


Fig. 9. The work schedule of an ideal job.

Referring to their situation on the labour market, the responses of Bachelor-graduate students being asked if they have already or have had until recently a job related to constructions are presented in Fig. 10:

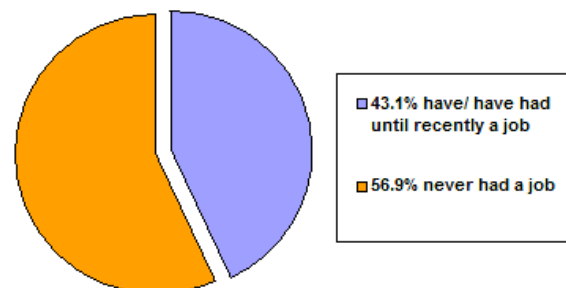


Fig. 10. The momentary situation of Bachelor-graduate students on the labour market, in construction related activities.

From the employers' point of view the Engineering graduates need to manage:

- Knowledge, skills and understanding of scientific principles and methodologies in order to be able to achieve solutions to real-life problems.
- Ethical appreciation of the social, economic and commercial environment.
- Practical application of engineering abilities in management, technology development, as well as in other contexts in which engineering knowledge can be applied.

III. CONCLUSIONS

As recommended for the research design [4], a general framework has been adopted in order to provide guidance about various aspects of the study, from assessing the general ideas to the detailed data collection and analysis procedures. Numerous students responded to the survey. Finally, the questionnaires were considered to be fully validated by 83.5% of the Bachelor's degree students, and by 92.7 % of the Master's degree students.

The gathering of various information on the competencies as well as on the studied subjects which are significant for the training of specialists in construction will lead to the specification of future areas of employment for the Master programmes graduate in "Special Engineering Technologies" and "Project Management & Property Evaluation".

After participating to the Master's degree programmes, the graduates shall acquire following categories of competencies:

- Conceptual competencies: to launch and recognize business strategies, to identify the significance of the obtained marketing information, to make relevant proposals and plans, and to establish solutions for changes or modifications as well as to determine how to implement them, to take decisions on investing in different resources (technical, technological, human), to be able to propose and implement strategies for the optimal development of the construction companies activity.
- Technical competencies: to ensure the implementation of necessary information for activities within groups and company organizations.
- Communication and networking competencies: to acquire knowledge enabling good communication in working with people, in order to obtain best results, developing a detailed understanding of the area of specialization with appropriate theoretical and practical use of specific language in communicating with different professional environments.

With reference to the Leuven/ Louvain-la-Neuve Communiqué [5], curricular reform has to be an ongoing process leading to high quality, flexible and individually tailored education paths. Towards, more learning outcomes shall be developed by Academics, in close cooperation with students and employer representatives, because student-centred learning requires new teaching approaches, effective support and guidance.

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