

THE EDUCATION IN ENTREPRENEURSHIP AND INNOVATION-A BASIS FOR SUCCESSFUL REALIZATION OF THE STUDENTS FROM THE UNIVERSITY OF MINING AND GEOLOGY "ST. IVAN RILSKI"

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Abstract: *Introduction of training in entrepreneurship, innovation and project management is one of the most discussed topics in the field of education as a whole. Particular attention is paid to this education in the field of higher education and is one of the priority objectives of the Europe 2020 strategy.*

According to the European Commission study, carried out in the Member States of the EU and 15 other countries in the period 2015-2015 [5] students received training in entrepreneurship and innovation be implemented most successfully. They are the best paid in the labor market, employment is almost maximum, the more likely they are to start their own business and their companies are the most innovative and creative.

This article presents the experience in entrepreneurship education, innovation and project management of the students from the UMG "St. Ivan Rilski", Sofia.

An essential point in this education is the acquisition of knowledge and skills that link higher education with the requirements of the business and the labor market.

Keywords: EDUCATION, ENTREPRENEURSHIP, INNOVATION, PROJECT MANAGEMENT, STUDENTS, BUSINESS IMPLEMENTATION

1. Introduction

University of Mining and Geology "St. Ivan Rilski" prepares specialists in unique specialties in Bulgaria for the needs of geology, mining and the mining industry, underground construction, extraction and transport of oil and gas, management of natural resources and the recycling of raw materials.

Students who have completed university succeed in enterprises of the sector in the country and in leading international companies in the field of mining and processing industry, developing its operations on four continents.

The education of students in entrepreneurship and innovation launched in 2010 with educational programs for the management of project activities, and by 2014-2015 and to entrepreneurship and innovation.

The main purpose of this education for students of the University is the opportunity to develop your knowledge through a private training, active dialogue with the teacher and individual and team work in set projects and case studies. Practical training process is based on the latest software tools and distributed in these areas.

2. Training in the field of management of project activities

Since many of the specialties in MGU "St. Ivan Rilski" are unique to the country was made an analysis of the curricula of similar courses in universities abroad and was found in many of the last 10 years have introduced disciplines related to innovation, entrepreneurship and project management. As a University, MGU was always in close contact with companies, users of the footage out of the country, and taking into account their needs and dynamics of the labor market in 2010 the Department of Informatics starts education in disciplines related to software project management activities.

To launch a successful training in this area have been undertaken following a number of successive steps.

The decision was made by management training project activities, entrepreneurship and innovation to be fought entirely in the educational qualification degree "Master" as the students at this

stage of his training are more motivated and have a clear vision for your career development.

The first discipline that was introduced in the training of students included the management, monitoring and reporting on project activities, taking into account the need for the preparation of the so-called Project managers.

In the beginning this discipline was included in the curricula of the three specialties of the University – Computer Technologies in Engineering, Industrial Management and Engineering Safety.

The criterion by which these specialties were chosen was based on the fact that the students in the educational qualification "Bachelor" stolen have studied Economics, Corporate and Business planning, and has the necessary basic knowledge. As a complementary criterion in this choice was reported and the fact that the graduating students are most often these specialties makes it necessary to draw up and monitor projects in their specific job.

The theoretical training includes materials on the establishment, management and monitoring of projects, the establishment and sustainability of project teams, the different ways of visualizing the projects, calendars, schedules, etc. Students learn and the basics of business planning.

Practical training in this discipline is based on the software product MS Project [6]. As part of its preparation and assessment students develop project related to their particular work or their interests. The choice of MS Project is based on the fact that the software product has advanced analytical capabilities. It provides tools to analyze and optimize the volume of planned activities, necessary resources, finances, time spent and the risks for the implementation as a separate task, and all the activities implemented in the specific company, regardless of its sphere of activity.

The selected software product is intuitive to operate and in the first two years of teaching about 40% of students say they are beginning to use it in specific work in planning and monitoring (or choose similar software products with open source or those with a subscription fee).

Chosen by us for teaching MS Project offers the option to merge all project activities implemented in a specific company's server, which provides job opportunities and monitoring

simultaneously on several projects and, where necessary, sharing resources and finance and teams in carrying out specific tasks.

After the second year of teaching interest in teaching this discipline have shown four more specialties in educational qualification degree "Master". At present, the discipline is taught on 7 different specialties of the UMG "St. Ivan Rilski ". The interest in this subject is large and due to the fact that in the mining industry the mining conditions are unique to any particular field, with the development of excavation and having dynamic planning and monitoring of activities. [1, 3]

According to the study from the last year, about 50% of students present projects that are associated with specific project activities in their company that will actually be implemented. An example of a specific project, which is in the process of implementation, is shown in Figure 1 and Figure 2.

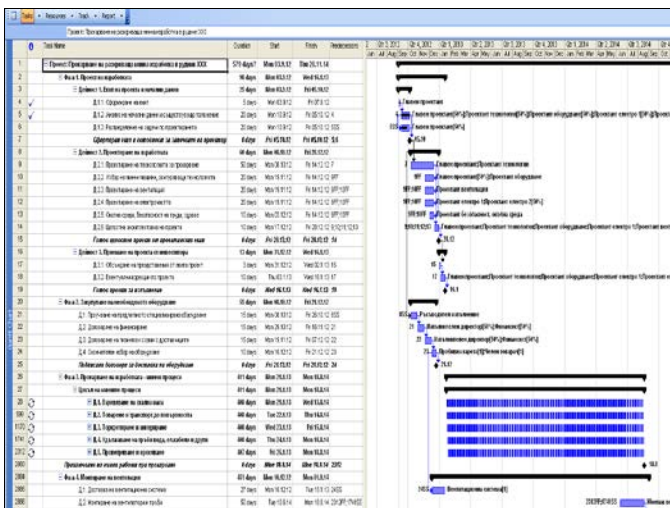


Fig. 1 A fragment of the presented student's project.

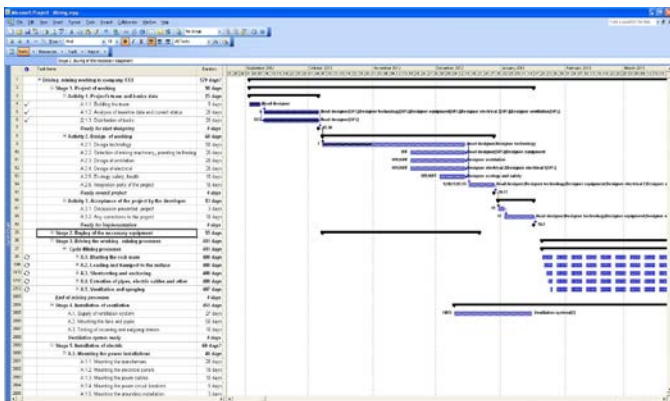


Fig. 2 The Gantt chart (of mining working)-a graphical view.

Over 70% of the students, who occupy managerial positions in companies; already use MS Project or equivalent product in their daily work, which clearly speaks about the benefits of training in the field of management of project activities. This contributes to the fact that the information can be updated practically continuously with the help of these software products, it offers a high level of detail of each activity and there are opportunities to generate different graphical or text reports on different indicators or elements of the project.

Over the past two years in the practical training of students was added and software MS Visio [2], which is a powerful application for creating professional diagrams with dynamic data. Product version Premium [7] offered as additional templates for use by different engineers and abilities as intelligent rules, validation and dismantles the activities of subprocesses.

In the process of training in the discipline for plan and manage project activities require a finding that a majority of students need a basic knowledge in the field of entrepreneurship, as they do not acquire the standard syllabus of engineering disciplines economic disciplines.

3. Training in the field of entrepreneurship and innovation

The lack of knowledge in this area feels particularly harshly by the students of the specialty "Computer Technologies in Engineering" due to the dynamics of the development of information and communication technology. Although a small part of them still in the educational qualification degree "bachelor" want to get involved in different initiatives in entrepreneurship, generating and implementing innovative ideas on the kind of "Junior Achievement", and some of the graduates degree master's wish to develop their business. Characteristic for both groups of students is that, in their opinion, they need additional expertise in the field of entrepreneurship and innovation.

In response to this need by 2014 for specialty "Computer Technologies in Engineering" started training in the discipline "Entrepreneurship in the field of Information Technology".

It aims to give the students' knowledge about:

- ✓ The technology and methods for generating ideas;
- ✓ Popular business models applied in the field of information and communication technologies;
- ✓ Product-oriented methodologies when creating a startup;
- ✓ Key components in templates for business modeling; - prototyping;
- ✓ Expert evaluation of market and survey of business-model;
- ✓ Indicators for assessing startup;
- ✓ Skills for the formation and management of the team;
- ✓ Attraction of investments and introduction to the market of venture capital;
- ✓ Skills for public presentation of ideas and projects to potential investors.

In the practical work in the discipline students apply theoretical knowledge by starting from the generation of an idea, create a business-model, do market research, form a team and create a plan for implementation and presented his idea created in order to attract investors.

In the process of training in the field of entrepreneurship and innovative technologies the students evaluated the effect of creating your own innovative development or technology transfer existing depending on the needs of a particular product or company. [4]

Still the experience in teaching this discipline is not large and is not at present carried out survey for assessing the effect of learning, but the fact is that the interest of students to entrepreneurship is present, as they actively participate in practical work when generating business ideas, the realization and presentation.

4. Conclusion

The dynamics of the labor market require students, students in engineering majors, have extensive knowledge in their particular subject area. In order to achieve as successful managers, even at the lowest level of management, they must possess additional knowledge in the field of project management, entrepreneurship and innovation.

Training in this area is particularly important for students of higher education institutions, since according to the statistics, about 20% of them in developed countries to create their own companies in the field of high technology and services. [5]

Among the students, graduates of University of Mining and Geology "St. Ivan Rilski" only about 2% to start their own business after completing his higher education, which may explain both their lack of preparation, and with the specifics of the mining-mining and processing industry.

The feedback that the University maintains continuous with the users of engineering personnel for this specific sector shows that students received training in entrepreneurship and project management are more successful and creative executives in the implementation of innovative technologies in companies.

This gives us the confidence to continue and expand training in entrepreneurship and innovation, which is crucial for the development of modern technological undertakings.

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