INNOVATIVE MODEL FOR PRACTICAL TRAINING OF STUDENTS IN A REAL WORKING ENVIRONMENT

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Abstract

Contemporary change and the vision of higher education in knowledge economy are based on the innovative training in the conditions of university IT environment. The University of Library Studies and Information Technologies – ULSIT - introduces different, qualitatively new approaches when training young people and thus imposes a new educational paradigm - FROM ACCREDITED QUALIFICATION TO CERTIFIED SKILLS. At the basis of this policy, conducted by the University, and of particular importance are not only what accredited specialties the students will graduate in, but what lasting skills they will acquire during their education that will enable them to enter directly into practice.

This paper presents a piloted, innovative model of practical training of students in a real working environment. The study is based on the method case study. The results from the implementation of the project "Students' practices" at ULSIT are analyzed and presented. The project has been implemented in partnership between the Ministry of Education and Science of the Republic of Bulgaria and universities and is funded by the Operational Programme "Education and Science for Smart Growth", with money from the European investment and structural funds. Special emphasis in the presented model are the opportunities and results of the project, as an experience based educational project, providing real working environment aimed at management and application of knowledge, acquired at the university.

Through the results of carrying out practical activities the meaning of training and the function of modern universities in the contemporary information environment are revealed to the fullest. The presented model also provides a unique opportunity for feedback in real time, from employers to the academic institution to supplement and update the academic preparation of students. The application of this model shows that the possibilities for deployment of theoretical knowledge are a powerful incentive for motivation of students on the one hand, as well as their mentors from training organizations and their academic supervisors from the university on the other. The interrelationship student - university professor - representative of the labour market has been examined, specific for the presented type of practical training. The information system for application, recruitment, approval, implementation, monitoring, reporting and verification of the activities shows the advantages of managing the activities in an entirely electronic environment.

The main results of the implemented project are concentrated in the achieved higher level of qualification of future specialists and the enhanced relationship between higher education and the labour market.

Keywords: Educational incentives, learning by doing, working environment, training, innovative model.

1 INTRODUCTION

The probability that in the future students of today will start working in a job which currently does not exist as a profession, is increasing in recent years. For a long time, companies with vision for the future have been more insistent that their teams have analytical and flexible skills allowing them to adapt to the changing environment. Among the most important skills required for the 2020 professions, the World Economic Forum identifies skills such as complex problem solving, critical thinking, creativity, emotional intelligence and the ability for judgment and decision-making [1].

According to Brynjolfsson, inequality arises when and where technology and education compete - "Education needs to be completely rethought and changed. It has to educate things in which people are good, and machines are not: creativity, ability to solve complex problems, literature, arts, relationships, caring for others. We should not teach our children only facts". [4]

A fact that is beyond any dispute is that young people of today should have much more than mere theoretical knowledge - they must be able to cope with life, find solutions to their problems, be active young people. In this dynamic and demanding environment, all eyes are set on the relationship...
between theoretical knowledge and the practical skills acquired during the training. For this reason, in the educational policy of the University of Library Studies and Information Technologies (ULSIT) there is a persistent tendency to increase practical training in a real working environment as an essential element of the educational process. The ambition is to introduce different, qualitatively new approaches in the training of young people that meet the new educational paradigm - FROM ACCREDITED QUALIFICATION TO CERTIFIED SKILLS. A good opportunity to realize this paradigm at national level is the project "Student Practices - Phase 1" [2] as part of the priority axis "Education and Lifelong Learning" of the Operational Program "Science and Education for Smart Growth" implemented in partnership between The Ministry of Education and Science of the Republic of Bulgaria and universities and institutes. The analysis of the results of the project's implementation at the University of Library Studies and Information Technologies, presented in this report, shows the benefits of such an approach for building a way of thinking in students, needed both for the economy of the future and for their personal success and self-realization.

2 METODOLOGY

The methodology of the study is based on a case study and is consistent with the goal that has been set - to identify good practices that are to serve as a basis for building a sustainable model of the interrelation student - university lecturer - representative of the labour market. The project is mainly targeted at:

- Improving the quality of education by providing opportunities for acquiring practical experience and improving the practical skills of the students at higher education institutions in accordance with the needs of the labour market;
- Achieving an easier transition from educational institutions to the workplace and increasing the successful realization of young people on the labour market;
- Supporting and promoting the establishment of stable partnerships between educational institutions and businesses;
- Increasing the incentives for students, ensuring their further participation in practical training in a real working environment;
- Stimulating the growth in the number of students who find work immediately after graduation;
- Providing prerequisites for updating both the curriculum as a whole and the subjects, courses and subjects taught in accordance with the needs of the labour market;
- Supporting the creation of sustainable mechanisms and opportunities for employers to select students who have proved their skills in a real working environment as well as their direct inclusion on the labour market.

The main objectives of the project are concentrated on a higher level of qualification of the future professionals and the improved relation between higher education and labour market. The analysis is based on a survey of the participating parties - students, training organizations and academic mentors. Main indicators of the achieved results are the number of successfully completed practical trainings, the number of students who have received a job offer after completing their training, the evaluation of the usefulness of the conducted training by students, mentors and academic mentors. In the context of the challenges facing contemporary dynamic working environment, the focus is further placed on identifying the achievements for acquiring and improving "soft skills".

The “Student Practices - Phase 2” project [2], where the University of Library Studies and Information Technologies is a partner, implements an innovative model for practical education of students in a real working environment that brings together business organizations, students and university education. Through the information system implemented under the project, an opportunity is provided for complete communication and easy administration of the processes and activities in the electronic environment. Analysis of the results of such practical training clearly demonstrates the usefulness of the selected approach that this integrated information environment (platform) provides. Respondents are unanimous that the platform facilitates processes and makes business "visible" to students. Another advantage of the system is that by strictly describing the functions and delegating certain access rights to the various participants in the information environment, easy control, accountability and convenience are achieved, necessary for the implementation of the activities related to the realization of the tasks and objectives of the project. Planned objectives under the project are realized on the basis of predefined "roles" that project participants perform while the project is in operation.
According to the chosen "role" - for example, a "mentor" from a training organization or a "functional expert" from a higher educational institution, a different type of registration in the information system is required, as well as a different work module and different duties, respectively. This division facilitates the easy administration of project activities as well as the rapid analysis, control and solving of problems through conducting specific practices by the students.

Fig. 1 is a schematic presentation of the process of communication through the system at the implementation of the practical training as well as the main participants. The main steps that are pointed out include the initial registration of students, their application after advertisements published by the training organizations, the approval of a plan and a program of the practice, and the coordination between a student, an academic mentor and an academic mentor.

The main project participants communicating through the system are:

- a student;
- a university team, responsible for the logistics during the implementation of the project;
- an academic mentor from the university, who supervises the student during the practical training;
- a mentor who designs the plan and the practice program, in agreement with the academic mentor, assigns tasks to the students and helps them to implement these tasks.

![Figure 1. Schematic presentation of the process of communication through the system at the implementation of the practical training as well as the main participants](image)

For the purposes of reporting the accomplished activities, the student and the mentor take into account daily attendance and daily activities that have been carried out. The academic mentor is obliged to carry out regular on-the-spot checks at the training organization. At the end of the training, the student, the mentor and the academic mentor complete a questionnaire that allows the analysis and summaries of the achieved results. To sum up, we may say that the system/environment provides data and information for multispectral analysis and continuous control of the processes.

The methodology is based on research and analysis of the interrelation between student - university lecturer - representative of the labour market, specific to the type of practical training presented. The main focus is on studying:

- the satisfaction of students with the individual trainings that have been carried out;
- employers’ views on students’ skills in order to identify strengths and weaknesses, and to synthesize specific guidelines for syllabi synchronization with the requirements of real working environment;
- the opinion of the academic mentors on the usefulness of practical training for upgrading theoretical training.
Last but not least, the purpose of the conducted research and analysis is to identify good practices and trends that will facilitate the transition from qualified accreditation to certified skills.

3 RESULTS

The main focus of the present study is placed on the issues and findings related to the practical trainings, conducted among students at ULSIT from specialties in the professional fields: "Public Communications and Information Sciences", "Informatics and Computer Sciences" and "National Security".

3.1 Demographics

The present results and conclusions are based on the practical trainings of students at ULSIT as per April 2017.

At the time a survey was conducted among the students, the number of people that had successfully passed internships was 150 people, out of which 70 (~47%) completed the whole survey. 58 of the students that took part in the survey are training for a BA degree; 12 for an MA degree. A ratio that clearly shows an increased interest on the part of students doing their BA degree to take part in a similar type of initiative to acquire practical skills in a real working environment since they are facing the choice of important decisions about their professional development, unlike the students studying for their MA degree, most of whom have already started their professional careers.

At the time this research was conducted, ULSIT had signed partnership contracts with 49 organizations and 80 mentors after this project. They were all invited to share their satisfaction with the practitioners, the theoretical and practical training of the students, their attitude to the work process and to the teamwork skills.

3.2 Survey findings

Besides achieving the main objective - providing an opportunity for practical training and applying the acquired theoretical knowledge in a real working environment, the analysis of different job advertisements gives us reason to conclude that most employers focus on the development of basic soft skills in students. Of course, the other type of skills, "hard" skills, directly related to work, are of no less importance. Secondly, while businesses must work with educators and governments to help education systems keep up with the needs of the labour market, companies must also fundamentally re-think their role as consumers of ready-made human capital, obtaining pre-trained talent from schools, universities and other companies. Some companies understand this and are investing more in the continuous learning, re-skilling and up-skilling of their employees. Given the ongoing rapid changes in the skill sets required for many occupations, talent management is no longer the preserve of the human resources function but will be a critical part of any company’s growth and innovation strategy – especially with younger cohorts of workers increasingly valuing a sense of purpose and diversity of experiences in their working lives.

In the results of practical training, most employers point out acquired skills for teamwork, in a dynamic working environment, predisposing to development and upgrading of acquired theoretical knowledge. Increasingly, "hard skills" and "soft skills" are on an equal footing for both employers and students who strive to balance the acquired theoretical knowledge with developed teamwork skills, critical thinking and application of experimental approaches when performing the tasks. Work in a real working environment enables an assessment of the applied methods in the university educational process. Students feel that the application of different approaches to changing the traditional teaching methods enables them not only to acquire a better theoretical knowledge but also to prepare for a better practical application of this knowledge. On the other hand, the impressions shared by employers provide an opportunity to adapt syllabi and teaching methods in order to improve the acquired professional skills by the future professionals. Interestingly, there is an emerging tendency for students to be more willing to carry out practical training in a job position that does not coincide entirely with the specialty they study. The analysis shows that students are trying to expand the range of knowledge and skills in order to be more competitive and adaptable to the demands and changes in labour market. At the same time, employers are willing to employ students with theoretical knowledge that does not coincide with the requirements of a specific job position, since they put an emphasis on students’ learning skills, their ability to acquire new knowledge as well as their creativity.
The analysis of the survey results is directed at the outlining of the quantitative parameters, tabular and graphical presentation of the results and the interpretation of the reported information.

The survey conducted among mentors from employer organizations shows that about 85% of them are satisfied with the attitude of students towards the working process. A large part of the students are keen to have additional training and express a serious attitude to the assigned tasks. The satisfaction of the business representatives is evident. Still, there are some recommendations to the process of teaching, concerning the enhancement of some aspects of the so-called "Soft skills," namely emphasis on teamwork, fostering critical thinking, and mastering some leadership skills.

On the other side of the road there are the students, where each student registered in the information system under the project is guided by the desire to acquire skills in a real working environment, which in turn will give them more experience for a future professional development. Students combine their practical skills with the opportunities provided by business and the theoretical knowledge obtained at university, which is clearly evident in Figure 1.

![Figure 1. Ratio between studied objects and knowledge utility](image)

A guiding principle when choosing a position is the opportunity to transfer theory into practice and the personal performance, while the quality of higher education is not doubted, especially as regards with the compliance of the specialty, studied at the university, with the needs of the real working environment and the professional development. Figure 2 shows trends in students' satisfaction with the number of vacant positions for practical training corresponding to their professional field.

![Figure 2. Students’ satisfaction with the number of practical training announcements in the system under the project.](image)

One of the key roles in the project is that of the "academic mentor", who is a representative of the academic staff of the university. His/Her main functions are to assist, monitor, supervise, report and certify the practical training of the student. The evaluation of students, who have completed their practical training is presented in the figure below (Figure 3).
The data reveal a high degree of satisfaction on the side of the interviewees by the academic mentor and indicates that he is in fact strongly engaged with the student in the process of further practical training. The academic mentor is the specialist who can judge the extent to which the practical training program meets students’ academic background and supports their practical training. S/He has the competence to request a change of the practical training program, specifically in order to achieve the goals of the student practice.

Figure 4 shows the percentage of students’ satisfaction regarding their work in the information system of the project. It appears that the majority of students did not have any problems with registering and maintaining their accounts in the system, as well as the follow-up activities, related to applying for and reporting of the practice. It is reported that there is also a percentage of respondent students who have encountered some difficulties in using the system. This fact places some requirements to improve the vision and the user view of the system. At the same time, it provides basis for further research to identify weaknesses and improve students’ knowledge and skills to work with information systems.

Direct results after the end of the practical training are reflected in Figure 5. At this stage, job offers by the employers' organizations are still a few in number, but this is also due to the fact that the survey was conducted in the middle of the project’s duration and at the time still a small proportion of students at ULSIT had conducted their practical training. However, the results clearly state that this type of interaction has been greatly beneficial to students as they have developed good relationships with people in their field of professional realization.
On behalf of the employers’ organization, the so-called “mentor” is chosen for each student, who is a direct manager in the working environment and a mentor to the student. In the course of the student’s practice, at the same time with the academic mentor, this mentor performs controlling, reporting and authenticating functions during the practical training of the student. Unlike the university mentor, he is primarily responsible for presenting the peculiarities of real working environment. The majority of surveyed students describe their work with the mentor as truly beneficial, since s/he had paid great attention to them, the assigned tasks were clear and understandable. This is shown in Figure 6.

The assessment of the respondents of the conditions that were created in the "training organization" is an indicator of the quality of practical training of the participants. The chart data shows that all students participating in the project were provided with a workplace that corresponded to the conditions in the job advertisements, which is in fact the main goal of the project.
In addition to the applicability of the acquired theoretical knowledge in practice, feedback is given to the extent to which the practical training will help acquiring the theoretical knowledge. A substantial part of surveyed students believe that the practical knowledge acquired during their practice in the employing organization will help them during their training at ULSIT. (Figure 8)

![Figure 8. Assessment of acquired knowledge during practical training](image.png)

4 CONCLUSION

In conclusion some basic summaries can be made and trends can be outlined in order to improve and multiply the achieved results and the identified good practices. The project represents an excellent opportunity to achieve synergy between theoretical and practical training and a link between universities and employers. In particular, apart from an opportunity to verify the applicability of acquired theoretical knowledge in practice, the acquisition and development of the soft skills of each student, involved in the realization of the project, is also greatly important. The close relationship between academic mentor, student and mentor during the practical training process, allows a personal assessment of the qualities and peculiarities of each student and, after research, to get a general picture of the acquired competences and skills and accordingly to identify the weaknesses in order to select adequate activities to minimize them.

REFERENCES


