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## Internationalization of educational programs through European projects

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### Abstract

Education has a very important role in the society development. Better education process ensures higher employment rates. One very important aspect of education is the lifelong learning program. In order for two or more educational institutions to cooperate, they have to have a common interest and a way to work together with each other. In this paper the authors presents the project that started at the initiative of seven educational European institutions, with the purpose to encourage mobilities for students and staff, exchange of ideas and good practice methods of teaching.

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### 1. Background

Since some years ago, in Europe, in Romania and the rest of the world one of the word most heard is: crisis. The end of the economic crisis is not seen nor expected in the near future as leaders of G20 said (Kelly and Baker, 2013).

Alongside crisis comes the unemployment for all sectors of population. In all European countries there are consequences of it. The average unemployment rate in Europe EU-27 grew from 6% in 2007 to 10% in 2012 as shown in figure 1 (“Unemployment rate EA 2007-2013,” 2012), which correspond to a number of almost 26 million people.

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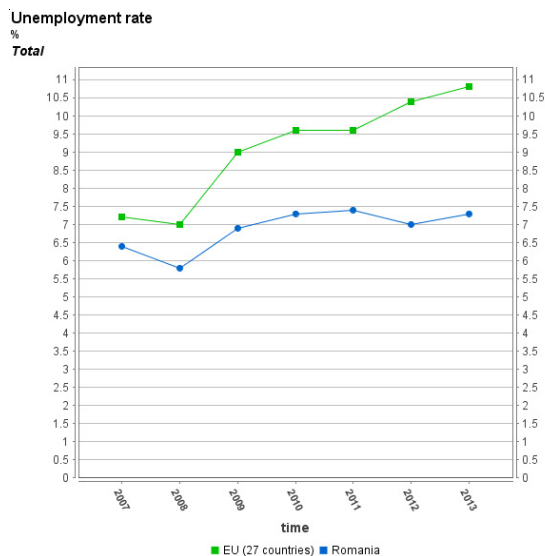


Figure 1. Unemployment rate (%) in European Union and Romania between 2007-2013

The statistics for EA-18 is even worse with more than 12% for 2013. If considered the youth, the numbers are even more frightening because of their evolution: more than 16% in 2007 up to a pick of 24% in 2013 as indicated in figure 2 (“Unemployment rate in EU 2007-2013,” 2012).

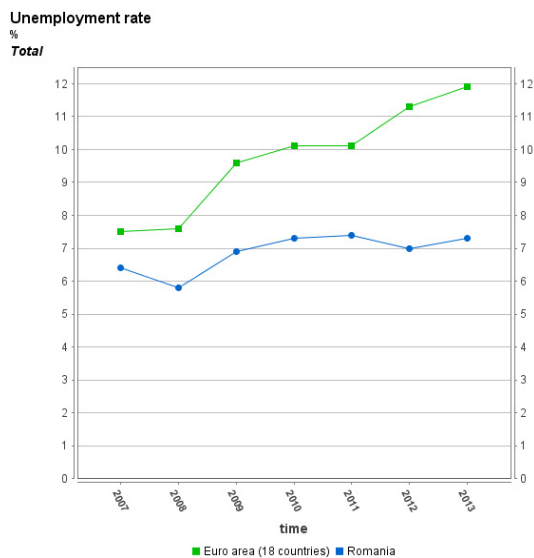


Figure 2. Unemployment rate (%) in Euro Area and Romania between 2007-2013

For the particular case of Romania, the unemployment rate of young people (below 25 years old) was not as fluctuant as in Europe, though it was very high: 20 – 24%, while for the rest of population the average unemployment rate is around 6%.

Confronting with these frightening numbers and statistics, some measure has to be taken (Barbulescu, 2012) (“Skill set and match cedfop.pdf,” 2014).

## 2. Education – the solution of the economic crisis

Education has a very important role in the society development (Mosora and Mosora, 2013). Better education process ensures higher employment rates (Herman, 2012). Actually there are more people graduated from higher education systems that could find jobs than the ones with less preparation level (“Key Data on Education in Europe 2012,” 2012). This situation is indicated in figure 3.

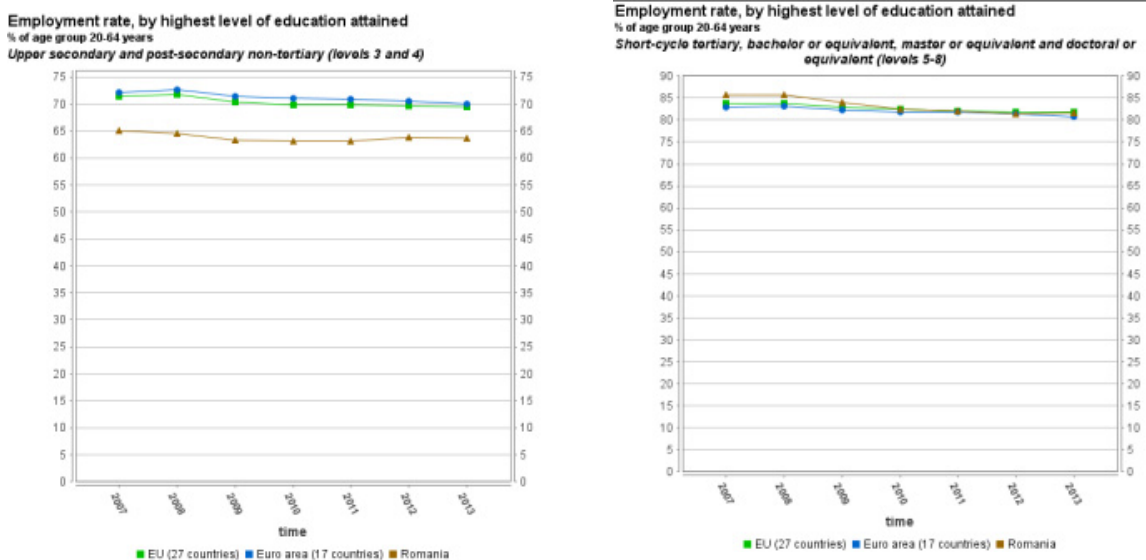


Figure 3. Employment rate, by highest level of education attained

It is known that companies prefer to hire better educated people than people with less preparation (Barbulescu, 2012). By doing this, companies send a message that education and preparation is a requisite that they take in account when selecting potential employees. In the near future, as the technology advances in every field of activity, it is estimated that there will be an increase with almost 6% in the jobs that require high level qualification. Also it will increase the necessity of the ability to adapt and innovate. This increase means that more than 15 million of jobs will require higher qualification and better professional skills (Bălan et al., 2013).

In Romania, the educational system is governed by the Educational Law 1/2011 and its changes.

The Romanian educational system could be divided in two main sectors: university and pre-university. The university educational sector is aligned with the Bologna decision. According to this the university studies are: bachelor (3-4 years), master (1,5-2 years) and doctoral (3 years). Each level of university educational program ends with the presentation of a thesis and the grant from the Ministry of Education of a corresponding certificate (diploma). As far as the pre-university studies, there are different alternatives, though some of them are not very well established. The student life starts at the age of 6 years old with the ‘preparatory’ or ‘0’ class. According to the Educational Law, this educational stage is obligatory. This stage is followed by the primary and gymnasium levels which end at the age of 14 years old.

At the age of 14, teenagers should be able to choose what kind of educational route they would like to follow.

Before 1989, in Romania there were some educational alternatives for youth of 14 – 18 years old: theoretical high-schools, industrial high-schools, professional education (Pierson and Odsliu, n.d.). The high-schools prepared youngsters who in general wanted to continue studying at the university. In the industrial high-school curriculum, there were included more technical courses than in the theoretical ones. Thus from these high-schools, youngsters could easier integrate in the labor market.

In the professional educational route generally speaking ended up students that could not study in high-schools. Because of this, the educational level of most of these students was lower than of the ones following the high-school route. For these reasons, after 1989 in Romania the professional educational route was not seen very good and thus most brilliant students avoided it as much as they could.

The politics of the Education Ministry was not always coherent about the professional education due to various factors. One of them is that in 20 some years there were 18 ministers of education from different political orientations. Each of them intended to introduce improvements and reform of the educational system. (“Ministry of National Education (Romania) - Wikipedia, the free encyclopedia.pdf,” n.d.)

According to the present Education Law and its changes, the vocational schools should be working and function. In reality, the Vocational Education is still developing itself, and has only few success cases so far. As in Europe the vocational education gains more and more importance (Yazçayır and Yağcı, 2009), Romania is on the way of implementing this important educational pathway for labor force development.

It should be taken into consideration both formal and informal methodologies. Also when thinking in education one very important aspect is the lifelong learning. This program enables people to face the challenges of a dynamic and competitive market labor (Ionela, 2012).

### **3. Internationalization of Romanian education system**

One of the values of the European Union is mobility of work-force and of its citizens. Among the general mobility, European Commission gives a great importance to the mobility and cooperation of youth and people involved in educational system. The fact that this is an important value could be noticed in the Erasmus+ presentation and budget distribution. It is known the fact that international mobilities are beneficial for students, teachers and their institutions (Villarroel et al., 2011).

Since the start of the adherence negotiations, Romania intended to adjust its educational system as much as possible to the European system (Bordean and Borza, 2013). Another benefit for Romania as a result of the implementation of LLP programs is that it can recover the delays with the rest of the more developed European countries. Also these programs help Romania and Romanian participants to improve the work efficiency (Ionela, 2012).

Through the National Agency of implementing Lifelong Learning Programs, both at the pre-university as at the university level, there are schools that applied for projects at their level of interest: Erasmus, Comenius, Grundtvig, etc. There are many benefits from participating in mobility of students and staff of educational institutions. First of all, by being exposed to other systems, the participants in these programs are benefited as their horizon expands in many ways. One of the most important aspects is that they could observe and compare human relations in general, and also in educational institutions. Second of all, the participants could observe both positive and negative educational life aspects of the countries where they have been. Through this, the participants could compare different aspects of life in the visited countries and Romania. By doing this, the participants can notice the fact that not all things in Europe are better than in Romania, and also not all things in Romania are worse than in Europe.

Nevertheless, one aspect noticed by the participants in European educational exchange programs, is that in general the European curriculum is more practice oriented comparing with the Romanian. The notions covered in the curriculum, at all levels are much more application oriented in western European countries than in Romania. This is valid especially in technological education. Many practice and experimental classes are done by doing experiments using many times either didactic equipment or industry equipment.

In the almost complete absence of the Vocational alternatives, many of Romanian young people end up in university studies, even though they might have desired other formative path.

There are several studies that indicates that in Europe there is a great interest of youth for the VET formative path (Koudahl, 2010)(Yazçayır and Yağcı, 2009).

In Romania there is the desire of many parents that their children end up studying university level professions, even though this might mean for many of them that after graduation they have to adjust to the labor market.

The Romanian society encourages its youth to study university level programs more because of social than economic benefits. It is proven that both VET and University educational systems are developed to prepare people

to integrate in the market labor and produce benefits for the society. A general perception is that the University graduates stimulate more the economic growth (Vu et al., 2012).

#### **4. One teacher and one student working with ProjectX**

In order to full benefit of the present and future student and staff mobility, seven educational European institutions decided to develop a transfer of innovation project called “One teacher and one student working with ProjectX”.

The project has as main purpose developing a common manual and practice methodologies for maintenance laboratory classes. The manual is intended to be applied with students that at the same time as they study are also working (Koudahl, 2010). The fact that students are working at the same time as studying provokes teachers to adjust their methodology. The idea of the manual is that students learn to work on project based activities (Wang et al., 2012).

The fact that there are several vocational educational institutions of different educational level in this project helps to have a wider perspective of different approaches to similar problems. Also, as the manual is developed by partners from different parts of Europe, makes it easier to implement mobility for students and teachers alike. Since students in their mobility program are going to study the same topic with the same methodology as in their home school, makes it easier the equivalence of obtained results. One of the advantages of taking the same class either in their school or in another is a big motivation and encouragement to learn some of the core values of the European Union: inter-cultural, common language use, acceptance of the realities of a different country, etc.

A challenge of the project is to facilitate teacher mobility among the partners in future collaborations. The project contains mobilities in the participant countries in order to discuss its implementation and development. In these meetings each team from each country has to present the rest of the partners their ideas and work.

From the point of view of teachers a good result is that for them the mobility activities are easier to prepare and report. The fact that they are going to use the same educational material as used in their school could be a motivator factor for encouraging to participate in European mobility (Lucu et al., 2011). Through the teacher mobilities, the fact that they are exposed to English language helps them to improve their language ability.

In the project each member has to implement three applications that can be done in its school with its own resources. All the proposals are discussed together in the consortium. Comments and suggestions are made by the rest of the international team. Based on that, each national team makes adjustments and corrections so that their proposal be as optimised as possible from different points of view. Then, when the international mobility take place, the partner have another opportunity to change ideas and bring even more improvements to each other's work.

After finishing this project, the team of teachers could also share their experience with other colleagues and students. By this, it is expected that the application courses to become more practical and more industry related.

For this project the University of Pitesti presents three themes:

- Starting the induction machine
- Checking the performance and load characteristics for the induction machine
- Implementation of digital frequency dividers

The topics of these themes are related to current activities of laboratory classes at the University of Pitesti in Electrical and Electronic Engineering educational programs.

The challenge for the teachers is to adjust these topics for VET level of education. Adaptation of topics taught at University level to VET level is not always an easy task, as the approaches are different for several reasons: age of students, degree of theoretical background, time, etc. Generally speaking, the classes at the University, even the practical classes (laboratories) are based on an increased level of theory background than in VET systems. For this reason, there are times when the practical aspects are lost and it is given too much emphasis on theoretical knowledge. Sometimes, at Bachelor level, courses (both theory and applications) tend to be so theoretical that they lose the connection with practical problem solving exercises that most graduates are going to face when finish the educational program.

Sometimes University teachers don't know how to be understood by younger students. Through these practices our team is forced to find ways of communication that are not always obvious for them. Even if in their daily

activities they work with more mature students, it is a good practice to also be exposed to younger students' mentalities.

The results of the Leonardo da Vinci project are intended to prevent that the practical lessons be too theoretical and loose the target group: youngsters that need practical skills in order to start working in electrical or electronic industry.

## 5. Conclusions

The recent open of the labor market in Europe challenges citizens, in particular students and teachers with mobility opportunities.

For educational actors, international mobility brings challenges as far as languages and professional skills. One way to overcome the fear of travelling for studying and teaching is that educational institutions create methods and opportunities of international cooperation. In order for two or more educational institutions to cooperate, they have to have a common interest and a way to work together with each other.

The fact that various European institutions decided to develop a common educational tool is going to ease the mobility to and from partner countries. This model could be applied among other educational institutions. A common methodology for teaching certain area is definitely a way to encourage and stimulate mobility at all levels of education.

The fact that the University of Pitesti team is exposed to the challenge to adjust some laboratory classes to VET philosophy is going to be helpful for both teachers as for their students. By developing these themes for VET systems, team members need to focus more on practical and application aspects.

We consider a good exercise for University teachers to develop educational materials for undergraduate students in their field of expertise. The result of this exercise is that by doing this they will become more conscious of intermediate steps and operations that in their regular classes might not be obvious and thus be skipped. This experience can then adjusted to regular University courses, taking into consideration the task group and purpose, but not losing sight of practical applications related to industry requirements.

A result of the project is that it opens future cooperation between the participant institutions in educational programs, such as Erasmus+. Taking part in a mobility program is always an enriching experience in many aspects: language usage, horizon expansion both as teachers as well as persons, notice of good things they have in their homeland and things that they might be challenged to change, etc.

After finishing this project, the team of teachers could also share their experience with other colleagues and students. By this, it is expected that the application courses to become more practical and more industry related.

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