

STUDY ON INNOVATION IN EDUCATION

*Maria Cristina SERB (TANISLAV)¹
Delia Mioara POPESCU²*

ABSTRACT

Innovative activities are all the activities with a scientific, technological, organizational, financial and commercial character and which update or are oriented to lead to the implementation of innovations. Some innovative activities contain in them novelty, while others are only auxiliary activities necessary to implement innovations. Innovation activities also include research and development, which are not directly related to the development of a specific innovation. This work aims to compare innovation in education and other sectors and at the same time identify the innovative approaches in the educational environment to improve school results in the framework of a European School of Dâmbovița County in a competitive environment. The hypothesis of our study is that an organizational culture based on innovation has a positive influence on the performances of the education unit, since it allows motivating the teaching staff, students and social partners. This study relies on a pilot survey realized on the level of the school unit and then on the analysis of: annual training time in preuniversity education, structure of the school year, way of application of the curriculum, home environment, school resources, classroom innovation. The conclusion resulted following this research is that the participation of the school actors (teaching staff, parents, students and members of the local community) in school innovation is an essential factor in school progress and at the same time in the development of an educational management adaptable and flexible in relation to the changes of the economic and social environment.

KEYWORDS: *innovation, educational environment, curriculum, school resources.*

JEL CLASSIFICATION: *I21, I25*

1. INTRODUCTION

A permanent preoccupation in a changing economy was to encourage innovation in all the activity domains. This is very important both for the developing countries and for the developed countries, because in the context of technological and social change, there is a pressing need to replace the old methods by new techniques.

To improve their activity, people need change. The factors triggering change are internal and external (Bessant & Tidd, 2007). At the same time, three perspectives can be distinguished regarding the need for innovation in education (Bush & Bell, 2005): technological, political and cultural, pillars of progress by innovation. Innovation in the educational system is the factor triggering innovation in the economic and business environment, the human resource being able to foresee the new trends and adapt to them.

Specialists consider that innovation in education is closely related to social innovation. Social innovation has as its sphere of action the domains: education, administration, health, economy, and aims to improve public awareness regarding the innovation meant for individual, social and economic development.

¹ "Valahia" University of Targoviste, Romania, crisstinaro@yahoo.com

² "Valahia" University of Targoviste, Romania, depopescu@yahoo.com

2. OBJECTIVES AND RESEARCH METHODOLOGY

This paper aims to compare innovation in education to other sectors and at the same time identify innovative approaches in the educational environment to improve school results in the Economic College *Ion Ghica* of Târgoviște, Dâmbovița County, in a competitive environment. The hypothesis of our study is that an organizational culture based on innovation has a positive influence on the performances of the education unit, since it permits to motivate the teaching staff, the students and the social partners. The study relies on a pilot survey on a sample of 60 respondents, realized on the level of the school unit. The study started from the analysis of: annual training time in pre-university education, structure of the school year, and way of application of the curriculum, learning environment, school resources, and classroom innovation.

The methodological approach used to evaluate the programme is a combination of the quantitative method of evaluation based on a questionnaire with qualitative investigation methods.

The sample that the survey was realized on was made up of 13 persons with a role of decision factor (members of the Administration Council (CA) in the school unit), 4 members of the Quality Assurance Commission (CEAC) with a role of evaluators, 10 permanent teachers, 10 parents members of the Parents' Council on the school level, 10 students members of the Students' Council on the school level and 3 social partners as one can see from Table 1.

Table 1. Characteristics of the respondents to the questionnaire

		Respondents number
1	Members of CA	13
2	Members of CEAC	4
3	Teachers	10
4	Parents from Parents' Council	10
5	Students from Students' Council	10
6	Social partners	3
7	Total	50

Source: author

The evaluative questions the study focused on were: Do you think that training time autonomy on the school level could have a positive influence on the performances of the education unit? Do you think that the present structure of the school year is adequate for performance? Does the differentiated application of the curriculum influence innovation on the level of the education unit? In what directions can one act for innovation to be present in classroom? Do you think that school resources influence the innovation for performance of the school unit? Do you think that the introduction of the new Student Status will have a positive influence on the increase of innovation in the education unit?

3. RELEVANCE AND IMPORTANCE OF THE RESEARCH ON INNOVATION IN EDUCATION COMPARED TO OTHER ACTIVITY SECTORS

Only change offers always an opportunity for something new and special. For this reason, innovation consists in an organized search with a well-defined purpose of changes and in the systematic analysis of the opportunities that these changes could offer to economic or social innovation (Drucker, 1993). The innovation activity can appear as a consequence of the changes in the structure of the firm/market, of the legislation, from the different perception of the problems, from the analysis of the failures and achievements, or from the solutions of similar firms (Vișan &

Botez, 2012). The evaluation of innovation in the sphere of education offers new perspectives, having in view an analysis by comparison to other activity sectors, the identification of the specific of the educational system, but also the examination of the relations between innovation and change in point of results (REFLEX, 2007).

Contrary to what people ordinarily believe there is a reasonable level of innovation in the educational sector, either in absolute data or by comparison to other sectors (HEGESCO, 2009). Out of the graduates hired in the educational sector, 70% appreciate their jobs as extremely innovative, at equality with the average of the economic sector (OECD, 2014).

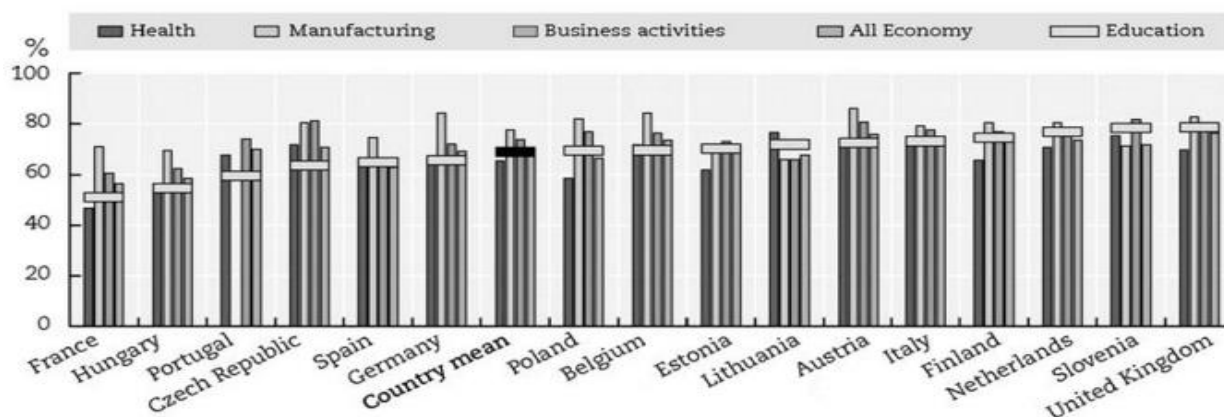


Figure 1. Graduates employed (%) in highly innovative jobs, by activity sectors

Source: OECD (2014)

In the educational sector, the intensity of innovation is greatest in higher education (80%), while secondary education and primary education are almost at the same level (respectively 63% and 65%). The highest ratios of extremely innovative jobs in education, regarding at least a type of innovation or all the three types of innovation (products and services; technologies and instruments; knowledge and methods), are registered in Great Britain (79% and 33%), Slovenia (78% and 23%), Italy (73% and 23%) and Finland (75% and 21%), over the European average (69% and 20%) (OECD, 2014).

4. RESEARCH RESULTS

The training time for the obligatory curriculum varies very much in the European countries. Consequently, for a comparative study, is taken into consideration the minimum training time for the whole obligatory curriculum divided by the obligatory number of years of education. The training time in a year theoretically reaches or goes over 900 (hours) in Denmark, Ireland, France, Italy and Holland. It is near 900 in some other countries: Belgium (895), Spain (899), and Luxembourg (892). At the other end of the scale, we find: Croatia (555), Bulgaria (644), Romania (692), Poland (693), Slovenia (699) and Finland (703).

In Holland and Austria, the curriculum is the same for all the primary school students, yet it changes when lower secondary education begins. At the level of the school year 2016-2017, in the Professional and Technical Education of Romania, the structure of the year is formed of 35 weeks of courses, summing up 169 working days, and is structured into two semesters: semester I (12 September 2016 - 3 February 2017) and semester II (13 February 2017 - 16 June 2017) (*Order of the Minister of National Education and Scientific Research no. 4.577/ 20.07.2016*).

Out of the analysis of the information obtained on the basis of a questionnaire it is noticed that the large majority of the respondents consider that a modality of increasing school performances would be the autonomy of the training time on the level of the school unit (table 2).

Table 2. Distribution of the sample respondents on training time and the structure of the school year in Romania

Issues covered	Appreciation				Do not know / can not tell
	Total agreement	Partial agreement	Partial disagreement	Total disagreement	
Do you think that training time autonomy on the school level could have a positive influence on the performances of the education unit?	12	21	7	8	2
Do you think that the present structure of the school year is adequate for performance?	11	7	20	10	2

Source: author

Many stakeholders in the domain of education, such as the students, the parents and the employers have a strong interest in the curriculum. They want to know what disciplines/modules are taught in school, if the curriculum is focused sufficiently on sciences and foreign languages, and, more generally, they want to know if the students gather the knowledge, skills and aptitudes they need, either to obtain a job or to continue their studies at a higher level.

On the level of primary education, the main accent falls on reading, writing and literature. In all the countries, except for Malta, the training time allotted for reading, writing and literature occupies the largest part of the minimum training time. In most of the countries, this proportion corresponds to about 25% of the total time. In Malta, most of the training time is dedicated to mathematics.

In all the countries, except for Malta and Portugal, mathematics occupies the second largest share of the total training time, i.e. about 15%. Portugal is the only country where the proportion of time allotted for reading, writing and literature is equal to that for mathematics. In Ireland, Poland and Iceland, the curriculum offers, at the same time, an equal or almost equal importance to these two categories of disciplines, since the proportion of time allotted to each is very close (the difference being under 5%).

The training time dedicated to natural sciences and to foreign languages is proportionally and substantially lower than that for reading, writing and literature or mathematics in all the countries. In most cases, students spend around 10% or less at each of these two disciplines.

In about half of the countries studied, learning a foreign language as an obligatory discipline does not start from the first grade of primary education, which explains in part the relatively limited training time attributed to the foreign language in several countries (under 5%).

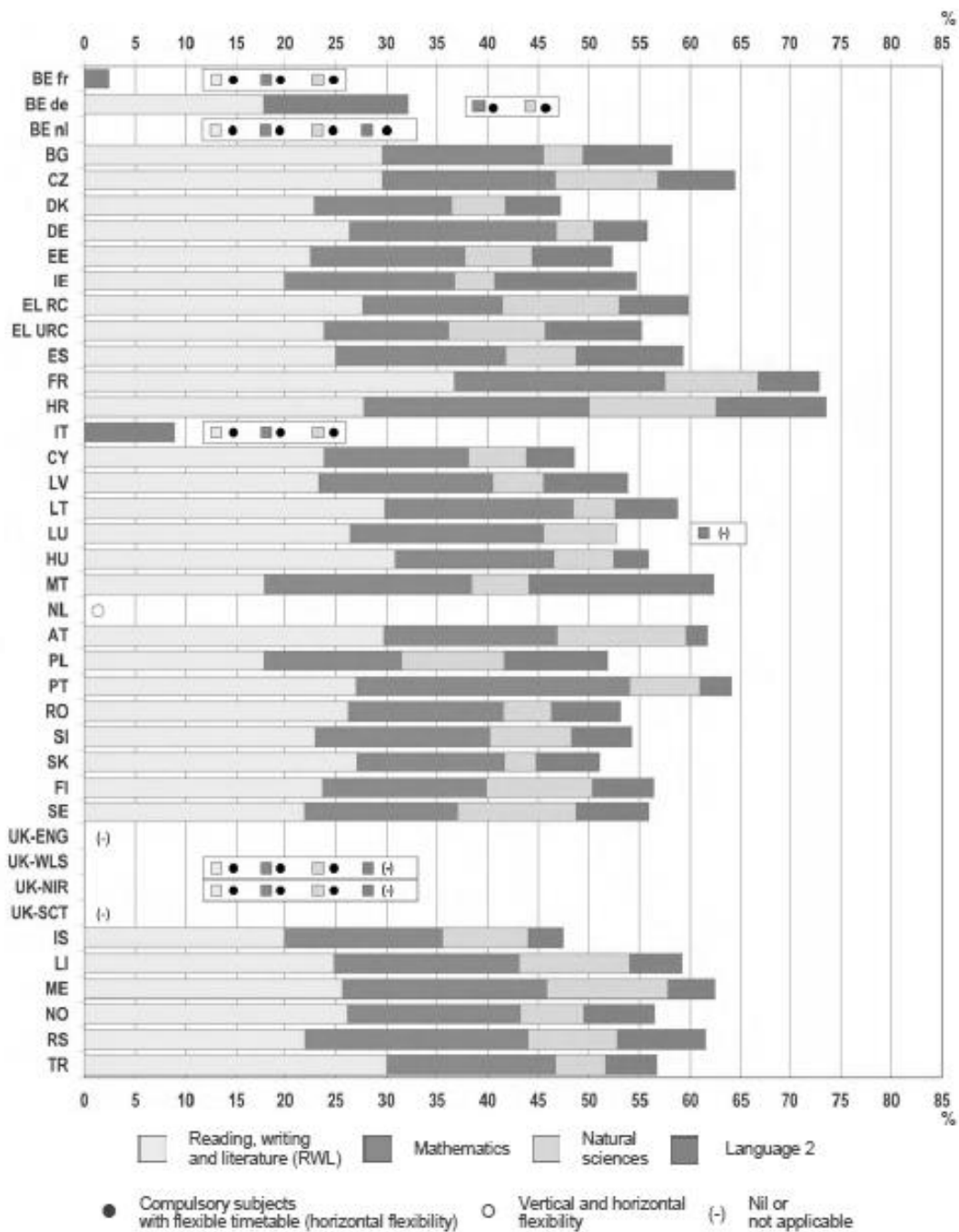


Figure 2. Percentage of the recommended minimum instruction time allocated to reading, writing and literature; mathematics; sciences; and the second language as compulsory subjects in primary education, 2014/15

Source: Eurydice (2015)

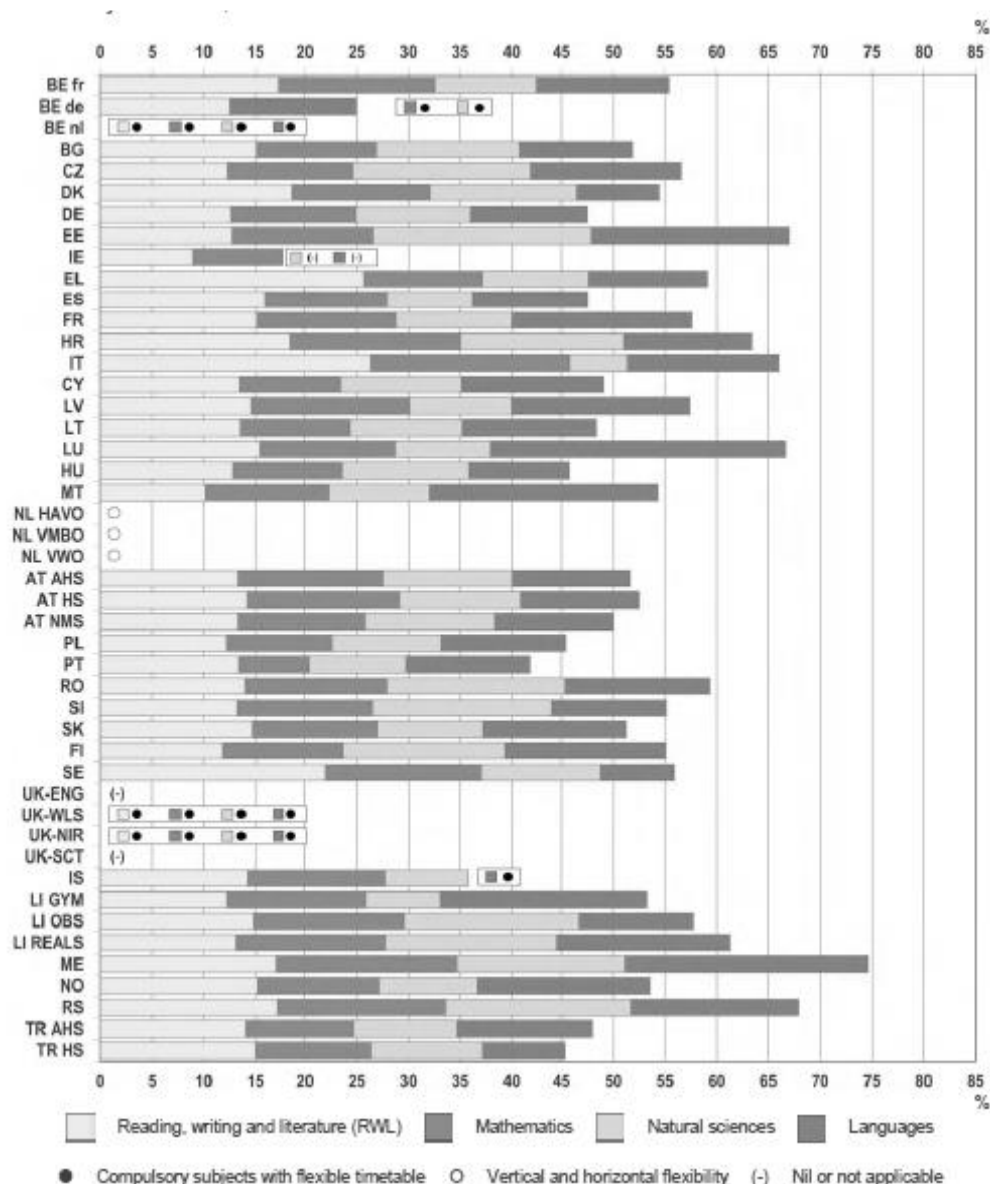


Figure 3. Percentage of recommended minimum instruction time allocated to reading, writing and literature; mathematics; sciences; and languages as compulsory subjects in compulsory secondary education, 2014/15

Source: Eurydice (2015)

The flexibility of the discipline is a feature of the training time obligatory in almost all the countries. Two main categories have been identified: the flexibility of the discipline in which the school or the local authority chooses a discipline for study, which is then obligatory for the students and the flexibility in which the pupil has the liberty to choose a discipline (from a set of disciplines that the school is obliged to offer) . In Romania in professional and technical education, the flexibility of training is given by the adoption of the local development curriculum (LDC). LCD is a component of the National Curriculum, which includes the classes allotted for the development of the curricular offer specific of each education unit, an offer realized in partnership with the economic agents that assure the framework for the realization of a training permitting, in the context offered by the local economic agents, the shaping of all the technical skills described in the Professional Training Standards (<http://www.tvet.ro/index.php/ro/component/content/article/18-cap4/141-cap4cr11.html>). In the LCD classes allotted by the framework education plans it is

recommended to undertake practical/laboratory activities to realize the learning situations identified together with the economic agent partner of the education unit. A flexible curricular framework is provided, which permits the adaptation to the training needs identified based on the labour market analyses, and the creation of opportunities for individualized professional pathways.

A little over a third of all the European educational systems foresee both the flexibility of the discipline chosen by the schools and the flexibility of the discipline chosen by the students. About a third is characterized only by the flexibility of the discipline chosen by the students and another third is characterized by the flexibility of the discipline chosen by the schools.

Out of the analysis of the information obtained based on a questionnaire it can be noticed that the great majority of the respondents consider that innovation on the level of the classroom or school unit has a greater weight if freedom to choose the curriculum on the level of the school unit is allowed. At the same time, an important role in the mode of differentiated application of the curriculum is played by the resources involved.

Table 3. Distribution of the sample respondents on how to implement differentiated curriculum and school resources

Issues covered	Appreciation				
	Total agreement	Partial agreement	Partial disagreement	Total disagreement	Do not know / can not tell
Does the differentiated application of the curriculum influence innovation on the level of the education unit?	13	19	10	2	6
Do you think that school resources influence the innovation for performance of the school unit?	16	15	13	4	2

Source: author

At the open question: "In what directions can one act for innovation to be present in the classrooms?" among the aspects mentioned there were:

- decentralizing school management;
- informatizing the processes in the education unit;
- informatizing the communication process with the parents;
- the training process needs to rely on interactive activities;
- developing activities by the home schooling system process;
- developing partnerships for the process of learning with the economic environment;
- approaching the themes from the perspective of the direct activity with the student;
- adapting the curriculum to the changing demands of the economic environment;
- allotting the budget for innovation;
- financial resources to be able to buy xerox and adequate consumables, flip-charts, computers for the specialized classrooms;
- endowments with modern technological equipments;
- an adequate legislative framework facilitating the students' access in trading companies, for practical training according to the Professional Training Standards;
- an efficient management on the school level;
- an active, viable partnership between schools and the local community.

Each education unit elaborates, starting from the Organization and Functioning Regulations elaborated by the Ministry, its own Organization and Functioning Regulations. On the level of each education unit, the Students' Council is created, meant to facilitate the students' participation in decision-making at school level. At the same time, the Students' Council also has forms of organization at the county, regional and national level.

In Romania, in the school year 2016-2017, as novelty, the Student Status (*Statutul Elevilor*) has been approved by the Order of the Minister of National Education and Scientific Research no. 4.742/10.08.2016. On the level of each School Institution the Student Status regulates the rights and the obligations of the students enrolled in the education institutions. This document has been elaborated by the Ministry of Education in collaboration with the Students' National Council and other representative organizations of the students. The fundament of this document starts from the respect for the values of the school community and of the educational system. It foresees free access, free of charge, to high-quality education, freedom of expression, the right to benefit equitably of the material and educational resources provided by the education system, intellectual honesty, support for critical thinking, respect for the dignity of all the members of the school community, and institutional openness to constructive changes.

Out of the analysis of the answers to the question: "Do you believe that the introduction of the new Student Status will have a positive influence on the increase of innovation in the education unit?", it can be noticed that over 50% of the respondents agree that it could have a positive influence on the increase of innovation on the level of the school unit.

Table 4. Distribution of the sample respondents on the innovation influence of Student status

Issues covered	Appreciation				
	Total agreement	Partial agreement	Partial disagreement	Total disagreement	Do not know / can not tell
Do you think that the introduction of the new Student Status will have a positive influence on the increase of innovation in the education unit?	15	17	11	4	3

Source: author

By the introduction of the Student Status, it is attempted to develop the young people's capacity to get involved in the school life by an active dialogue between managers, teaching staff and community.

5. CONCLUSIONS

Future-oriented schools will be able to take up the challenge to promote change in the learning environment. The identification of the resources for innovation is an ideal opportunity for applying the knowledge and the experience concerning the learning and teaching resources and to become adaptable and creative during this process. Financial constraints are not a reason not to implement a realistic and practical approach regarding the identification of the resources for innovation.

Technical and Vocational Education and Training (TVET) system of Romania is undergoing a continual reform process, initiated in 1996 with support from the program Phare VET RO 9405. At present, education and professional training play an important role in innovation, helping the

schools to make changes in the processes implemented and to adopt the new technologies by improving their innovation capacity. Education and professional training need to be improved and the national evaluations should offer guarantees for assuring the programs' quality and consistency. The acquisition of skills is a continual process, it does not end with formal education, schools must lay the bases of a continual learning, and the reward and the attractiveness of lifelong learning can contribute to increasing the participation degree.

REFERENCES

- Bessant, J. & Tidd, J. (2007). *Innovation and Entrepreneurship*. John Wiley & Sons
- Bush, T. & Bell, L. (2005). *The principles and practice of educational management*. Cromwell Press, Wiltshire
- Drucker, P. (1993). *Inovația și sistemul antreprenorial*. Bucharest, Editura Enciclopedica
- European Commission/EACEA/Eurydice, (2015). *Recommended Annual Instruction Time in Full-time Compulsory Education in Europe 2014/15*. Eurydice – Facts and Figures. Luxembourg: Publications Office of the European Union
- HEGESCO, (2009). *Competencies and Early Labour Market Careers of Higher Education Graduates, Education and Culture, Lifelong Learning Programme*. (<http://www.hegesco.org/content/view/36/108/>)
- OECD, (2014). *Measuring Innovation in Education. A New Perspective*. Educational Research and Innovation, OECD Publishing
- REFLEX, (2007). *The Flexible Professional in the Knowledge Society*, Research Centre for Education and the Labour Market, Maastricht University
- Visan, S. & Botez, L. (2012). *Inovare, cercetare științifică, progres tehnic*. Bucharest, Editura ASE