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Article

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MODERNISATION OF HIGHER EDUCATION IN THE CONTEXT OF EUROPEAN INTEGRATION – A COMPARATIVE ANALYSIS

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Abstract

Modernization of higher education system is a complex process and it became a priority on the agenda of the concerns of both European Union and each Member States levels.

In this article we present the results of the analysis of the main aspects of the modernization of higher education system of Romania after its integration in European Union, compared to the evolution of other Member States, in the same period, from the perspective of three indicators: access, retention and employability.

In order to achieve the proposed objective, we conducted a research and an aggregation of data from secondary available sources, reports of the European Commission and various statistical reports which will be referred to throughout the article.

Keywords: European integration, higher education, modernization, access, retention, employment, EU 2020 Strategy

JEL classification: I21

Introduction

The European Union's educational systems modernization represents one of the priorities presented in the documents related to the Europe 2020 Strategy. Since March 2010 The European Commission proposed the Europe 2020 Strategy as a synthetic expression of the main measures for the sustainable growth, in favor of inclusion at EU level. The assumed objectives through this document refer to the employment, research and innovation, climate changes and energy, education and poverty prevention.

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From the education's evolution and modernization point of view, the Strategy objectives focused on decreasing of the school drop-out rate below 10% and an increasing of the rate of population between 30 and 34 that finishes tertiary education, which represents at least 40% of the total European population. These strategic targets imply a common effort, on multiple levels, some priority themes being targeted, such as: "the innovation union", "youth in motion" or "agenda for new skills and jobs" (European Commission, 2010).

The educational systems modernization within the European area takes into account, among others, the social dimension of the educational development, aspect that was mentioned for the first time in the context of the Prague Ministerial Conference of 2001, when politics and measures concerning youth equity and access in universities, the retention or the maintenance of those admitted in the education system and completion of higher education studies were taken into account. As a natural consequence of integration in European Union, Romania has undertaken a number of educational goals in correlation with the Bologna process, whose signatory is since 1999. Thus, from the perspective of youth access in universities and following tertiary studies, Romania took into account both to establish quantifiable goals for widening access to higher education and to increase enrolment and graduation rates by those admitted/enrolled.

In this article we present in a synthetic way the main developments in Romania and in the other European Union states through the three mentioned dimensions: access to education, the maintenance of those enrolled/admitted until the completion of studies and, finally, employability. The innovation elements that we bring into discussion through this article consist in presenting correlations between the level of completed education and the employability degree. Both, from the conceptual and operational aspects, these correlations are absolutely necessary, given the need to increase economic and social role of Romania's University education by linking it with the requirements of the labor market and community needs (Ghigiu et al., 2015).

1. Literature review and analysis of current status

Modern education systems are characterized by a balance between the various aspects of fundamental education in comparison with the applied one; there exist comparative approaches between teaching activities and research, between private education and the public one, between the social dimensions and the economic ones, between the novelty and tradition (Cabuz, 2008). After the 80's in USA the concept of „entrepreneurial university” was implemented, putting an important accent on the exploitation of scientific research and knowledge resources for practical purposes, respectively for the increasing of the scientific research role in the business development. Thus, an entrepreneurial model was adopted, applying concepts regarding business profitability directly connected to scientific research and innovation. In Europe, the natural response to the trend of the development of tertiary education was the *Lisbon Strategy*, which has fundamented the European orientation of higher education to innovation and transfer of technology, with an accent on the society based on knowledge (Report from the High Level Group, 2004). The three aspects that define the objectives of development strategies in the Horizon 2020-accessibility, retention, and employability – has been a preoccupation for several specialists, not just of the studies carried out by the institutions of the European Commission (Reinalda, 2008; Shattock, 2014; Curaj, Deca and Hâj, 2015).

Access to higher education has been difficult in "the years before the Second World War", becoming easier from the possibility of access point of view (giving up of existing discriminations, multiplying and diversifying the study programs, the economic situation of families, and so on) in the last 60-70 years. At the European level, the rate of population participation in higher education, calculated as a percentage ratio of students and total population has exceeded 10% of the total population only after the mid '50s, and only in some of the more developed states (Koucky, Bartuse and Kovarovic, 2010).

Equal access to education for each social group facilitates the development of the potential of younger generation, using its talents and skills for the benefit of the economy and the society as a whole. In connection with these issues, some theories such as: „the social and cultural theory of the education level's transmissions", „the socio-psychological model of the stratification process" – trying to explain to what degree and in what ways educational systems from different countries helped to overcome barriers within society or represented instruments for transmitting the social status between generations, from parents to children (Brennan, Locke and Naidoo, 2007).

Regarding retention/maintaining the students in the study programs until graduation, the specialists tried to elucidate which of the approaches is more explicit and more correct: the decreasing of the maintaining in the education programs degree because of the institutional culture and the tertiary institutions services quality, or because of the changes in lifestyle (Thomas, 2002), economic and technological factors, with all the implications on productivity level, family incomes, diversification of specializations, and so on.

Employability represents the third dimension of the modern education. Ensuring the quality of the educational system and the focus on the employment for graduated students can be seen as tangible results of the government, potential employers and students investment during the process of training. In the last years, we can notice the special employers interest in students career orientation, shown by organizing periodical meetings in partnership with the universities, conferences and scientific events, and so on.

2. An analysis on access, retention and employability at the European level

The three dimensions are considered essential (without being exclusive) to measure the degree of modernization in the tertiary educational system - access to education, retention or maintaining students in the educational system until graduation and employability after graduation, are very useful for analyzing of the European educational system evolution in the integration and inclusion context.

The analysis of these dimensions at the European Union level is more difficult because of the lack of complete data series relating to all currently member states. Based on the information available in the specific literature, including the European Commission Reports we will realize a synthetic array of dimensions above, printing it at the level of particular situations of Romania and the EU member states, resulting from the convergence of several economic and social factors which were manifested during the implementation of the national reform programs towards achieving the 2020 Horizon objectives.

3. Research methodology

As we specified, through this research we aim to provide an image about the evolution of educational systems from Romania and across the European Union from the perspective of some considered relevant indicators for accessibility, retention, and employability. The authors did not propose themselves an exhaustive perspective, from all the determinant factors. The indicators selection is based on analysis and aggregation of some statistical data presented by the European Commission regarding education and learning (Eurydice) and, also, on information published at national level (IEMU project coordinated by UEFISCDI).

The relevance of the chosen indicators results from their capacity of synthesizing as dependent variables a lot of factors, as follows:

- Accessibility offers the image of existence – in a variable extent – of some eventual restrictions and/or discriminations made on different criteria (social status, living environment, ethnical membership, economic power, culture, systems of values);
- Retention or maintaining until graduation in the followed program/specialization reflects the consistence of the students interest for the chosen study program, maintaining current the specialization, the government or family higher or lower level of support, the quality and novelty of the education plans, the quality of teaching, the internship programs, the quality of the career counseling, the continuity and the consistence with the future working environment, and so on;
- Employability or the insertion capacity requires the educational system capacity to add value through well paid work and the capacity to shape work in the future (Ghoshal, 1997). Employability is based on the premises that between the higher educational system and the social and economic environment is a permanent and long lasting link (Yorke, 2006), which is absolutely necessary. At the international level, there are research centres and institutes that rank the world's universities according to several indicators considered relevant (Bothwell, 2015), including those envisaged in this article.

The advanced hypothesis are based on the analysis of statistical data and comparable information in terms of relevance for the discussed issue, taken from Eurostat databases and European Commission reports in the field of learning and education (Eurydice, 2014).

To demonstrate the correlation between the data series the SPSS 20.0 was used, and to validate the appropriate correlation hypothesis between indicators the regression analysis was used, providing a plus of safety despite the evidences resulted from the simple data series analysis.

Methodologically, the optimal use of the three dimensions that we consider essential for the higher education modernization will be performed by using the following indicators (table no. 1).

Table no. 1. Indicators for measuring the dimensions of the development of the university education

The size of the development of university education	Relevant indicator
Access to tertiary education	The number of students enrolled in tertiary education at the national level
	The degree of completion of tertiary education for the population aged 30-34 years ^{*)}
Retention within education	The annual expenditure for educational institutions public and private student compared to GDP per capita, at tertiary level of education (ISCED 5-6)
	Drop-out rate from education and training at tertiary level of education
Employability after graduating higher education	The employment rate of young people who have completed tertiary level studies
	The employment rate of young people according to the highest completed level of education ^{*)} (bachelor or master, as the case)

Note: ^{)} as they are named in the official documents*

3.1. Research objectives and hypothesis

Objective no 1. To identify the extent to which access to higher education has evolved after Romania's adherence to the European Union, compared with the European average.

Hypothesis. (H1.1): In Romania's case, the number of students enrolled in tertiary education at national level is not directly influenced by European integration, (H1.2): the degree of completion of tertiary education for the Romanian population aged 30-34 years after integration (2007-2014) is comparables percent to the one of other European countries for the same reference period.

Objective no 2. To appreciate the higher education retention capacity evolution through annual expenditures per student compared to GDP per capita and the drop-out from education and training rate in Romania and European Union after adherence.

Hypothesis. (H2.1.): Romania's financing for higher education is not correlated with the integration efforts, (H2.2.): Drop-out from education and training rate is not influenced by the post-adherence process in the case of Romania, being a result of complex factors specific to each country.

Objective no 3. To determine the evolution of employment rate related to higher education at the European Union level compared to Romania and the correlation between the completed level of education and the employment rate.

Hypothesis. (H3.1.): In Romania's case the employment rate specific to the tertiary level is not correlated with the post-integration measures, (H3.2.): There is a strong correlation between the education level and the degree of employment for the most European Union countries, including Romania.

4. Results and discussions

The policies at the European education systems begin to be increasingly more oriented towards removing any obstacle related to the cultural base, social or economic foundation of those who apply for admission into institutions of higher education. An analysis at the European Union level reveals that many states have established general objectives regarding access to forms of higher education. However, a deeper concern for the issue of people accessin the higher education system in correlation with the particularities of the targeted social groups have had just a number of 8 states of EU (figure no. 1).Also, from the access to higher education perspective, the active monitoring of social characteristics of the potential students is highly nuanced in EU.

Thus, only some countries – Hungary, Finland, Ireland and United Kingdom - monitor all or almost all aspects of the social profile of the students: disability, labor market status before the access to higher education, the status of the labor market throughout higher education, the type and level of qualification acquired prior to access to higher education, the socio-economic environment, the status of ethnic, linguistic or cultural minority, the immigrant status.

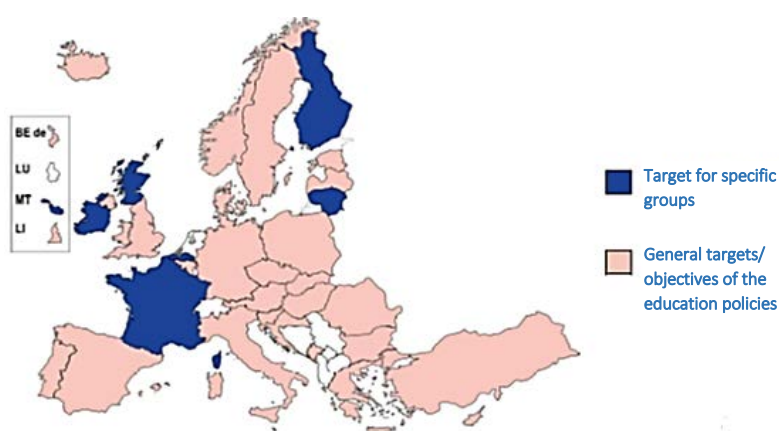


Figure no. 1. EU Member States which have set general or specific targets to access the forms of higher education

Source: European Commission, 2014

Regarding the capacity of European educational systems to analyze coherently the students diversity evolution from the perspective of the social characteristics presented above, this capacity is still low, a number of 19 states, including Romania, not being able to provide information about the structural changes of students population in a current period of time which relates to the past 10 years. From the analysis of statistical data concerning the number of students enrolled in tertiary education, we notice that in five from the 28 EU countries the number of students has dropped constantly from 2007 to 2012. The European average was on an uptrend until 2012, when a little decrease produced (table no. 2).

**Table no. 2. The number of students enrolled in tertiary education
at the national level**

(1.000)

	2007	2008	2009	2010	2011	2012
EU (28 states)	19024.2	19180.6	19609.4	19991.1	20283.3	20245.9
Belgium	393.7	401.7	425.2	445.3	462.4	477.7
Bulgaria	258.7	264.5	274.2	287.1	285.3	285
Czech Republic	362.6	392.5	416.8	437.4	446.2	440.2
Denmark	232.2	230.7	234.6	240.5	258.9	275
Germany(d)	2278.9(d)	2245.1(d)	2438.6(d)	2555.6(d)	2763.1	2939.5
Estonia	68.8	68.2	68.4	69	69.1	67.6
Ireland	190.3	178.5	182.6	194	196.3	192.6
Greece	602.9	637.6	:	641.8	660.7	663.7
Spain	1777.5	1781	1800.8	1879	1950.5	1965.8
France	2179.5	2164.5	2172.9	2245.1	2259.4	2296.3
Croatia	140	143.4	139.1	149.9	154	157.3
Italy	2033.6	2013.9	2011.7	1980.4	1967.6	1925.9
Cyprus	22.2	25.7	31	32.2	32.1	31.8
Latvia	129.5	127.8	125.4	112.6	103.9	97
Lithuania	199.9	204.8	210.7	201.4	187.1	175.1
Luxembourg	:	:	:	:	5.4	6.1
Hungary	431.6	413.7	397.7	389	381.9	380.8
Malta	9.8	9.5	10.4	10.8	11.5	12,2
Netherlands	590.1	602.3	618.5	650.9	780 (d)	793.7
Austria	261	284.8	308.2	350.2	361.8	376.5
Poland	2146.9	2166	2150	2148.7	2080.3	2007.2
Portugal	366.7	376.9	373	383.6	396.3	390.3
Romania	928.2	1056.6	1098.2	999.5	871.8	705.3
Slovenia	115.9	115.4	114.4	114.9	107.1	104
Slovakia	218	229.5	235	234.5	226.3	221.2
Finland	309.2	309.6	296.7	303.6	308.3	308.9
Sweden	413.7	406.9	422.6	455	463.5	453.3
United Kingdom	2362.8	2329.5	2415.2	2479.2	2492.3	2495.8

Note: = not available data. d = different definition

Source: processing data from Anon. n.d.

The analyzed information reveals that the number of students enrolled in tertiary level education is not correlated with actual post-adherence measures. Romania's case being rather a result of the objective conditions regarding the demographic curve evolution corresponding to the age class that represents the *main area* of the statistical population from which individuals are selected according to the highest probability to enroll in a tertiary institution. We consider that the conditions for accepting (H1.1) hypothesis are fulfilled.

One of the relevant indicators for both access to tertiary education and for retention within it is represented by the proportion of total population aged between 30 and 34 years of age who hold a university degree (table no. 3).

**Table no. 3. The degree of completion of tertiary education
for the population aged 30-34 years**

	2007	2008	2009	2010	2011	2012	2013	2014	Target by Horizon 2020
EU (28 states)	30.1	31.2	32.3	33.8	34.8	36	37.1	37.9	40
Belgium	41.5	42.9	42	44.4	42.6	43.9	42.7	43.8	47
Bulgaria	26	27.1	27.9	27.7	27.3	26.9	29.4	30.9	36
Czech Republic	13.3	15.4	17.5	20.4	23.7	25.6	26.7	28.2	32
Denmark	38.1	39.2	40.7	41.2	41.2	43	43.4	44.9	40
Germany	26.5	27.7	29.4	29.8	30.6	31.8	32.9	31.4	42
Estonia	33.5	34.4	36.3	40.2	40.2	39.5	42.5	43.2	40
Ireland	43.3	46.3	48.9	50.1	49.7	51.1	52.6	52.2	60
Greece	26.3	25.7	26.6	28.6	29.1	31.2	34.9	37.2	32
Spain	40.9	41.3	40.7	42	41.9	41.5	42.3	42.3	44
France	41.4	41	43	43.2	43.1	43.3	44	43.7	50
Croatia	16.8	18.5	21.3	24.5	23.9	23.1	25.6	32.2	35
Italy	18.6	19.2	19	19.9	20.4	21.9	22.5	23.9	26
Cyprus	46.2	47.1	45	45.3	46.2	49.9	47.8	52.5	46
Latvia	25.7	26.3	30.5	32.6	35.9	37.2	40.7	39.9	34
Lithuania	36.4	39.9	40.4	43.8	45.7	48.6	51.3	53.3	48.7
Luxembourg	35.3	39.8	46.6	46.1	48.2	49.6	52.5	52.7	66
Hungary	20.6	22.8	24	26.1	28.2	29.8	32.3	34.1	30.3
Malta	20.8	21	21.9	22.1	23.4	24.9	26	26.5	33
Netherlands	36.4	40.2	40.5	41.4	41.2	42.2	43.2	44.8	40
Austria	20.9	21.9	23.4	23.4	23.6	26.1	27.1	40	38
Poland	27	29.7	32.8	34.8	36.5	39.1	40.5	42.1	45
Portugal	19.5	21.6	21.3	24	26.7	27.8	30	31.3	40
Romania	13.9	16	16.8	18.3	20.3	21.7	22.9	25	26.7
Slovenia	31	30.9	31.6	34.8	37.9	39.2	40.1	41	40
Slovakia	14.8	15.8	17.6	22.1	23.2	23.7	26.9	26.9	40
Finland	47.3	45.7	45.9	45.7	46	45.8	45.1	45.3	42
Sweden	41	42	43.9	45.3	46.8	47.9	48.3	49.9	40
United Kingdom	38.3	39.5	41.4	43.1	45.5	46.9	47.4	47.7	:

Source: processing data from Anon. n.d.

The available data analysis (available only for this age category) reveals for Romania a visible ascending trend after adherence, with a 2.1 percentual points from 2007 to 2008 and a constant increasing in average of 1.58 percentual points in the following years, until 2014. The increase of this percent in Romania case frontloaded the increase of the 28 member states average, which has remained around 1.1 percentual points for the period under review. This may represent an evidence of the positive effects of adherence and of the period after integration over the education system from Romania, and also the effect of a better management in the context of aligning policies and practices from Romania at the European educational standards.

The analysis of available data reveals that for a number of the 11 states of the total 28 (Denmark, Estonia, Greece, Cyprus, Lithuania, Hungary, Netherlands, Austria, Slovenia, Finland and Sweden), the percentage reached in 2014 has already surpassed the target of concerned relating to Horizon 2020.

In the context of the examined data, the hypothesis (H1.2.) cannot be accepted, because only three European countries have similar values to those of Romania regarding the graduation degree of the population aged 30-34 years. The value reached by Romania in 2014 remains below the European average of 37.9%, despite the outrunning by our country of the 28 member states average growth rate.

An important aspect in the retention capacity analysis in the European countries for students belonging to the higher education system is represented by the possibility that students are able to organize studies in part-time form. Most European countries offer this possibility (figure no. 2), with the exception of France, Germany, Austria, Iceland and Finland (Eurydice Report, 2014). Furthermore, almost half of the states that offer the possibility of part-time tertiary education are associated with higher amounts of taxes.

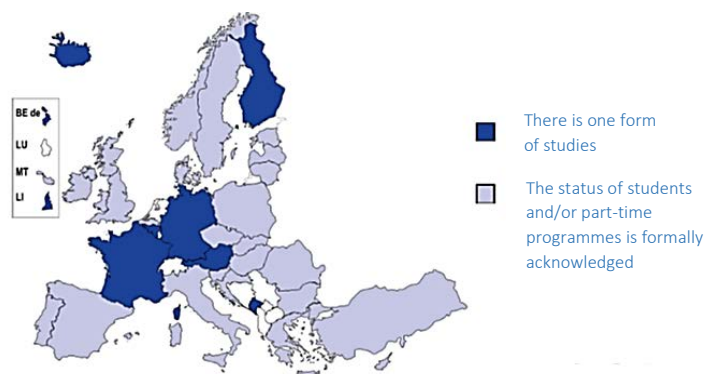


Figure no. 2. EU Member States which offer the possibility of organization studies in the form of part-time learning programmes

Source: European Commission, 2014

The students' degree of retention represents the extent to which students remain within an institution of higher education and progress towards completion of program of study within a given time limit. Thus, the retention is associated as a performance indicator of the educational institutions.

A very important aspect in terms of retention within the tertiary education is the extent to which governments allocate financial resources to successfully manage the necessary mechanisms for the organization of a quality education. From this perspective, a comparative analysis of available statistical data indicates a specific trend to each European state. Romania holds the smallest allocation of financial resources, having the lowest per-student expenditures as a proportion of GDP per capita, ranging between 26.6% and 29.3% between 2009 and 2011, while Sweden has allocated amounts between 49.95 and 53.5% of GDP and per capita in the same time period (figure no. 3). However, the proportions indicated need to be analysed in the context of specific countries. For example in Italy, expenditure per student are between 29.5% and 29.9%, and they should be analyzed in correlation with teachers salaries level, because a teacher's student rate with almost 50% higher than in the OECD area. Instead, spending in infrastructure is very small. (OECD, 2015).

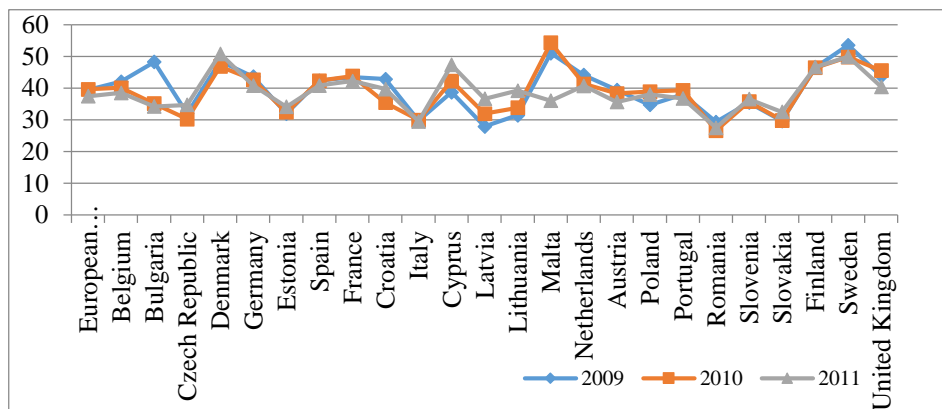


Figure no. 3. Annual expenditures of public and private educational institutions per student, compared to GDP per capita at tertiary level (ISCED 5-6)

Source: processing data from Eurostat, n.d.

Analyzed data confirms the hypothesis (H2.1.) as it can be seen that Romania does not have a real possibility of capitalizing at a higher level the advantages of European integration and the post-adherence mechanisms, given the fact that still the level of funds allocated to education is low.

The analysis of drop-out rates at the tertiary level shows a specific situation for each system, most of the European states succeeding during 2009-2014 to reduce the proportion of dropping-out students. This phenomenon has a double explanation: the creation of jobs that require higher skills to higher education system and, also, the allocation of substantial financial aid to students with outstanding performances and for the economic disadvantaged ones.

In conditions of economic crisis, the opportunity cost associated to education decreases in relation with the employment cost, leading to increasing the attractiveness of student status compared to the unexperienced employee one. This, in addition to the financial support of the state, determined many students to preserve their status and consider this option a better „investment”.

Processing of statistics available at the level of the European Commission and Eurostat, reveals that there are a number of states where the proportion of students who drop-out school increased within 2012-2014; for Romania there is an increase of almost one percentage point, from 17.3% in 2013 to 18.1% in 2014.

Regarding the hypothesis (H2.2), based on the data analysis it can be noticed the changing situation of Romania for the entire post-adherence period, when Romania had increasing and decreasing of the drop-out proportions. Romania has a high average, i.e. 17.86% compared with the European average of the 28 member states for the same period, which is 12.88% (figure no. 4). Thus, from hypothesis (H2.2) the drop-out rate from Romania, as in the case of other countries, is a resultant of a complex of specific factors and not necessarily of an application of a policy imposed by the post-integration requests.

In the analyzed context an important cause of the drop-out increases in some states is the existence within the economy of some seasonal changes (e.g. Spain, Italy, Malta, Portugal), for which the level of high school studies and corresponding specializations are sufficient.

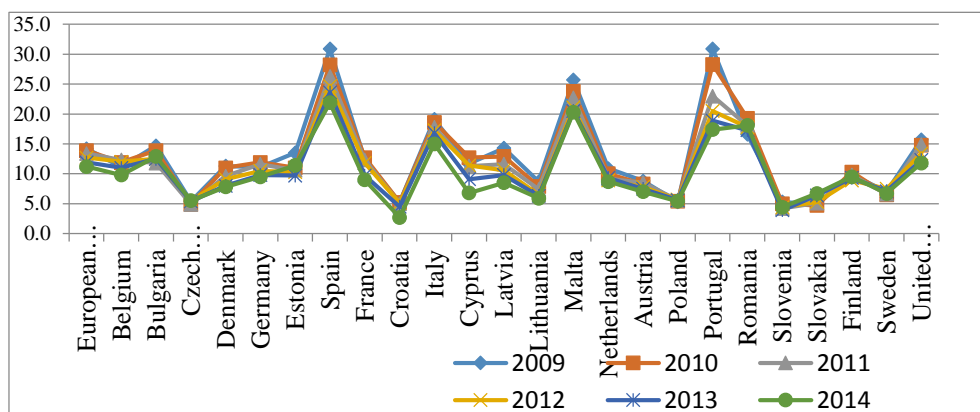


Figure no. 4. Drop-out rate from education and training

Source: processing data of Eurostat, 2015

The tertiary graduates' employment rate in EU decreased from 2009 to 2014 in most of the member states. From the Horizon 2020 program perspective the proportion of employed graduates (aged between 20 and 34 years of age) who had graduated more than three years before the time of the analysis should arrive at 82%.

The data analysis reveals a good situation for the European average until 2011, situation that is better than the value assumed through Horizon 2020. Starting with 2012 a significant decreasing for all the 28 EU member states can be noticed.

In Romania, right after the moment of adherence in EU it can be noticed a significant increasing - from 89% to 92.9% - of the employment rate, and after 2009 a decreasing trend installed (figure no. 5), as a consequence of the economic crisis that affected the persons with tertiary education as well.

In the light of these results, the hypothesis (H3.1.) should be checked, being obvious the influence of the global economic crisis at the level of Romanian economy after 2009.

The presented situation highlights the lowest employment rates in countries such as Italy, Spain, Croatia or Cyprus. A pertinent explanation is that the aforementioned countries have a seasonally strong tourism potential and, in this case, some employees may not be included in the statistics. A similar situation can also be observed when the employment rate is correlated with the highest level of education (table no. 4).

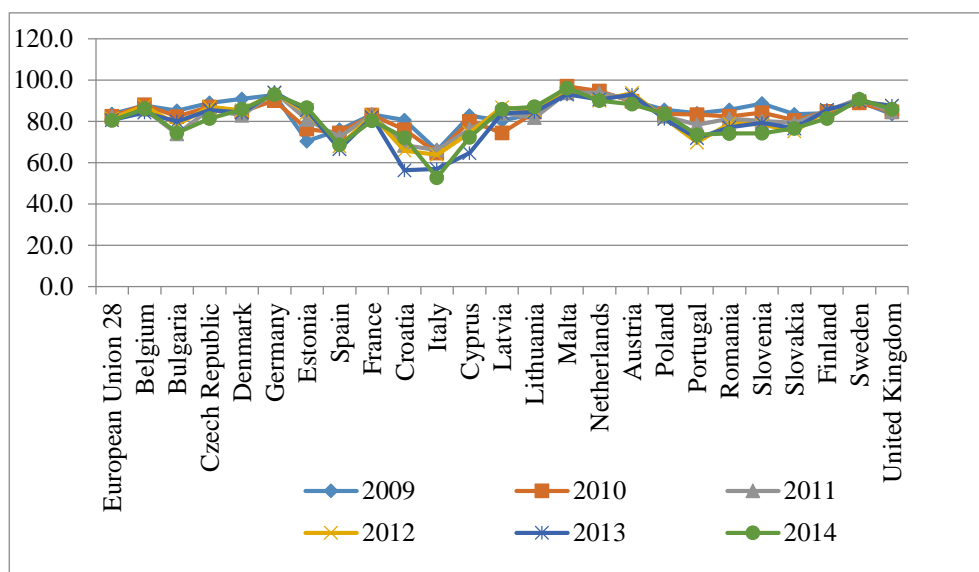


Figure no. 5. The employment rate of young people who have completed their studies at tertiary level

Source: processing data of Eurostat, 2015

Table no. 4. The employment rate of young people considering the highest level of completed studies (1-3 years after graduation, %)

European Union (28 states)	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	48.9	45.7	39.0	36.9	37.4	32.3	33.6	32.2
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	73.8	75.2	70.6	69.6	68.5	67.0	66.3	67.5
Tertiary education (levels 5-8)	86.0	86.9	83.7	82.5	82.4	81.5	80.7	80.5
Belgium	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	39.9	43.6	37.4	34.7	33.3	31.0	28.2	26.2
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	70.4	73.0	70.8	68.9	70.9	68.9	67.7	64.5
Tertiary education (levels 5-8)	88.5	90.7	87.8	88.1	85.9	87.6	84.4	86.2
Bulgaria	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	-	-	-	-	-	-	-	-
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	58.4	67.8	60.5	50.1	46.7	49.3	49.5	48.3
Tertiary education (levels 5-8)	85.0	87.2	85.2	82.4	74.0	78.5	80.0	74.5

European Union (28 states)	2007	2008	2009	2010	2011	2012	2013	2014
Romania	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	49.1	51.9	51.0	45.8	43.2	45.2	46.6	46.6
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	66.5	73.0	66.1	58.8	56.3	55.9	51.6	53.0
Tertiary education (levels 5-8)	89.0	92.9	85.7	82.5	81.4	79.1	77.2	74.2
Denmark	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	73.4	65.4	61.6	52.3	47.8	47.6	47.0	40.9
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	88.8	90.3	84.1	81.3	82.8	82.3	78.6	81.2
Tertiary education (levels 5-8)	92.8	90.7	91.0	84.8	83.0	85.5	84.3	85.9
Great Britain	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	53.1	46.9	46.0	42.0	41.1	40.7	40.9	45.2
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	78.4	76.9	72.6	71.6	69.5	69.8	72.0	74.5
Tertiary education (levels 5-8)	88.9	87.2	83.6	84.8	84.7	87.7	87.6	86.0
France	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	37.9	38.7	28.0	29.6	28.3	24.7	25.6	20.9
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	70.6	72.2	66.5	67.0	65.9	63.9	63.0	61.6
Tertiary education (levels 5-8)	84.7	88.8	83.4	83.1	83.3	83.1	82.1	80.4
Italy	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	25.5	19.0	18.6	13.5	10.3	10.8	10.8	12.6
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	60.7	59.6	54.2	49.9	48.7	43.9	38.0	35.6
Tertiary education (levels 5-8)	70.0	70.5	66.1	64.8	66.2	63.9	57.0	52.8
Holland	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	68.9	67.7	61.7	64.7	60.1	51.6	55.4	52.4
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	90.4	90.4	90.4	87.4	87.5	84.4	79.4	80.6
Tertiary education (levels 5-8)	96.6	95.4	94.2	94.8	93.9	90.2	90.7	90.1

European Union (28 states)	2007	2008	2009	2010	2011	2012	2013	2014
Portugal	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	69.3	65.2	68.4	66.9	54.0	47.0	46.1	43.8
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	78.6	80.4	79.2	76.1	70.3	63.1	61.6	63.8
Tertiary education (levels 5-8)	82.1	83.2	84.0	83.4	78.5	69.9	72.0	73.6
Germany	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	42.7	41.6	38.4	44.1	52.7	43.3	46.7	42.6
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	79.6	82.8	80.5	83.3	84.5	85.1	86.1	86.8
Tertiary education (levels 5-8)	91.8	92.5	92.9	90.2	94.2	93.8	94.1	93.1
Spain	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	60.8	52.9	39.9	30.2	35.2	25.3	27.9	26.1
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	76.2	68.3	58.7	54.6	48.5	45.0	36.9	48.5
Tertiary education (levels 5-8)	87.5	85.2	76.0	74.5	72.5	68.0	66.6	68.7
Poland	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	34.7	40.3	29.6	31.4	25.3	22.1	26.4	22.0
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	64.0	69.5	67.6	66.2	64.6	61.4	61.7	64.0
Tertiary education (levels 5-8)	84.4	87.0	85.7	83.7	82.6	81.5	81.3	83.7
Greece	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	57.6	58.5	50.4	40.7	42.7	29.6	25.0	24.5
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	60.1	57.3	55.9	50.3	40.0	28.2	25.3	30.9
Tertiary education (levels 5-8)	70.1	71.4	68.1	60.4	52.8	47.7	45.4	47.4
Estonia	2007	2008	2009	2010	2011	2012	2013	2014
Less than primary level, primary and secondary level of education (level 0-2)	-	-	-	-	-	-	-	-
Upper secondary and post-secondary non-tertiary (levels 3 and 4)	80.8	81.5	64.0	46.8	68.1	63.7	67.0	73.9
Tertiary education (levels 5-8)	90.5	83.0	70.5	76.3	81.0	84.3	85.5	86.7

Source: processing data of Eurostat, 2015

In order to verify the correlation between the level of studies and the degree of employability after graduation we used linear regression. Through this regression model we propose to highlight, for every analysed country, on the one hand, the relationship between the primary and the secondary level of studies and on the other hand the relationship between the secondary level and the higher studies level (table no. 5).

The regression equation for the above data series will be:

$$\hat{Y}_i = a + b \cdot X_{ij} \quad (1)$$

\hat{Y}_i represents the employment rate of young people who have completed secondary education and X_{ij} the employment rate of young people who have completed primary education. For countries which has resulted a multiple correlation coefficient and multiple determination coefficient with values closed to 1, and a level of statistical significance close by 0, we can say that the regression model is validated.

For the second regression equation is considered \hat{Y}_i as being the employment rate of young people who have completed tertiary education, respectively X_{ij} the employment rate of young people who have completed secondary education. In this case also, for most countries the multiple correlation coefficient and multiple determination coefficient have values closed to 1, with a significance level close to 0. Corresponding to these situations, the regression model is validated.

Table no. 5. Multiple correlation coefficient, multiple determination coefficient and the level of statistical significance for the regression equations between the level of completed studies and the employability per country

	E.U. (28 states)		Belgium		Bulgaria		Romania		Denmark	
	primary and secondary level of education	secondary and superior level of education	primary and secondary level of education	secondary and superior level of education	primary and secondary level of education	secondary and superior level of education	primary and secondary level of education	secondary and superior level of education	primary and secondary level of education	secondary and superior level of education
R	0.926	0.978	0.885	0.639	:	0.879	0.817	0.956	0.883	0.786
R²	0.858	0.956	0.784	0.409	:	0.773	0.667	0.914	0.780	0.617
Sig.	0.000	0.000	0.001	0.064	:	0.002	0.007	0.000	0.002	0.012

	Great Britain		France		Italy		Holland		Portugal	
	primary and secondary level of education	secondary and superior level of education	primary and secondary level of education	secondary and superior level of education	primary and secondary level of education	secondary and superior level of education	primary and secondary level of education	secondary and superior level of education	primary and secondary level of education	secondary and superior level of education
R	0.939	0.534	0.964	0.891	0.850	0.939	0.813	0.895	0.971	0.970
R²	0.882	0.286	0.929	0.794	0.723	0.882	0.661	0.802	0.944	0.940
Sig.	0.000	0.138	0.000	0.001	0.004	0.000	0.008	0.001	0.000	0.000

	Germany		Spain		Poland		Greece		Estonia	
	primary and secondary level of education	secondary and superior level of education	primary and secondary level of education	secondary and superior level of education	primary and secondary level of education	secondary and superior level of education	primary and secondary level of education	secondary and superior level of education	primary and secondary level of education	secondary and superior level of education
R	0.646	0.795	0.944	0.971	0.718	0.853	0.710	0.981	:	0.668
R²	0.417	0.632	0.892	0.944	0.515	0.728	0.505	0.962	:	0.446
Sig.	0.044	0.006	0.000	0.000	0.019	0.002	0.021	0.000	:	0.035

The degree of employability is different depending on the level of education of people. The processing of statistics from Eurostat databases using the simple linear regression has highlighted the fact that there is a strong and direct relationship between the level of completed studies and the employability rate, which shows that as individuals complete a higher level of education they have the possibility to get hired easily. Thus, the hypothesis (3.2) is accepted, the measured indicators reveal that, in the case of Romania, there is a strong correlation between the level of education and the degree of employability, especially for the tertiary education.

Based on the processing of data, some atypical situations can be outlined, caused by factors which are not related to the abovementioned indicators. Therefore, the Great Britain and Holland are countries which have a lower unemployment rates because their economies are able to create more jobs. Moreover, the statistics reveal that the economies of Northern countries have higher employment rates, whereas the economies of the Southern European countries have lower employment rates.

Conclusions

Modernizing the education system in Romania and its harmonization with the main features of education in the European area is a lengthy process, which is influenced by culture, society and economy. Considering this, only few European countries have developed educational policies and strategies that can manage effectively the disadvantaged groups of students in terms of their access to tertiary education, meaning that the statistical measuring systems cannot be implemented equally across the Union, which leads to major difficulties for assessing the progress and to correlate the influence of various factors for each state.

Recognition of learning prior to tertiary education access becomes a concern increasingly urgent for many European countries, due to a lack of clear strategies with concrete and measurable targets concerning the minimization of dropout rates.

Despite the development of multiple forms of studies, European countries should be aware of the costs of management and support the effective access, especially for disadvantaged groups. At the same time, it is obvious the need to increase the employability of graduates of higher education.

Under the national strategy of development, Romania has set general targets regarding educational policy objectives. Similarly, a small part of EU countries have set targets for specific groups (disadvantaged people from different points of view, minorities etc.). The aspects related to the social profile of students are not monitored either in Romania or in most other member states. From the point of view of the possibilities of statistical analysis in the field of tertiary education, Romania does not have the ability to provide detailed information on changes in the structure of the student population in the last 10 years, along with many other member states.

The access to higher education exceeds the reference area regarding the eligible person's right to apply and to be considered for a particular study program, getting a genuine social dimension. In terms of access to tertiary education, the evolution of the number of students enrolled in Romania does not correlate with measures taken post-adherence, this situation is mainly determined by objective factors with local action, namely the evolution of the demographic curve.

Graduation degree by the population aged 30-34 of higher education is upward for Romania for all years from 2007 to 2014, approaching greatly the 2014 target of 26, 7% set by the

national reform Programme, with reference to Horizon 2020. Compared to the average growth rate in the 28 member states for the same period, Romania has decreased, maintaining a steady increase of 1.58 percentage points.

In terms of retention or maintaining the students until completion of the program they enrolled in, there is a reduced rate of financial resources allocated to Romania compared to other Member States, the costs per student, calculated as a proportion of GDP per capita between 26.6% and 29.3%, are significantly below the European average, which is between 39.4 and 37.4%.

In the same context, the analysis made on the proportion of Romanian students who drop out indicates a fluctuating trend, with both decreases and increases, given that throughout the period under review the average for the 28 European Member States showed a steady decline in the number of abandonments.

Capitalising the results of Romania's integration into the European Union requires further efforts in this direction, and from the conducted research have resulted necessary correlated measures aimed at both the characteristics specific to education and those aimed at harmonization with the requirements of the labour market, motivating employers to support education and training of young people. The field of employability in tertiary education has been examined from the perspective of employability rate for university graduates.

Immediately after adhesion, Romania registered a growth rate of employability of graduates from tertiary education from 89% to 92.9%, after which a constant decreasing trend could be observed which led to the value of 74.2% for 2014. This is characteristic to the general trend of the European Union, which after 2012 experienced a similar evolution of this rate.

There are strong correlations between the studies completed and the degree of employability for more than half of Member States, including Romania. This shows that tertiary education provides a real and much better employment chance compared to other levels of education, with a few exceptions due to specific national factors.

The limits of the research carried out at European level are inextricably linked to insufficient statistical data needed for a detailed analysis, which covers the pre-adhesion and the post-adhesion period for all indicators taken into account in terms of access, retention and employability. Moreover, the analysis was performed only for some of the indicators to highlight three dimensions for the same reason of the lack of relevant statistical data

Given the strategic importance of education, both as a field of research and development of national plans, we consider it is possible in the future to create some research which can analyse the relationship between development and various relevant indicators for living standards, for the performance in research and innovation in education and training policies impact on the national economy.

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