ROLE OF HUMAN CAPITAL FORMATION IN ECONOMIC DEVELOPMENT

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Abstract
The paper highlights the role of education in the growth of economic competitiveness and efficiency of human capital, in accordance with the quality of education and investments in human resources, in order to enhance labour productiveness. The paper starts by a brief analysis of Romania’s educational system, by comparison with the EU countries, analysing the number of high school students / college students per teacher, the percentage of education expenditure in the GDP, the correlation between the labour force’s training level and insertion into the labour market. The paper also presents the EU countries’ ranking related to higher education and professional training, pointing out the importance of lifelong professional training at the place of work. The paper draws conclusions regarding the importance of the labour force training, as the operation of a modern economy requires the existence of a well-trained labour force, education representing one of the fundamental pillars of any society’s development.

Keywords: education, labour force, competitiveness, economic development

JEL Classification : I25, O10, O15.

1. Introduction
For an economy to be competitive it is not enough to have advanced technologies, it is imperative to dispose of a well-trained and specialised labour force.
While the growth of investments determines the increase of economy’s physical capital stock, the educational system lies at the basis of the human capital growth. [1]
The theory of human capital lies at the basis of several fundamental ideas of modern economic science, explaining thus the gain differences depending on age and social-professional category and identifying at the same time the main cause of the unequal incidence of unemployment by trades. [2] In this context, according to the Macmillan Dictionary of Modern Economy, we must understand that the idea of human capital refers to the investments in human resources, with the purpose of generating labour productiveness.
The efficiency of human capital depends on the quality of the education received and the higher the investments in education, the higher the performance level of human capital. The stock of human capital existing at a certain moment constitutes an important factor of growth and economic-social development, and the proof is the development of macro-economic research focused on the integration of education in the production functions, used in the study of economic growth. It was found that the countries with a population with high levels of education and professional training are also the most productive from the economic viewpoint, actual data showing that the percentage of engineers and scientists in the total labour force represents a determining factor for the rapid economic growth. [1]

2. General aspects related to education in Romania and in the European Union
Education is a premise of employment and the most important asset of a human being and, although it does not offer a guarantee in relation with a possible unemployment, it enhances most of the times the opportunity to find a job. The quality of training and acquisition of new abilities by the labour force has become increasingly important at present, as competitiveness factors.
As regards the elementary education, in Romania, despite a high gross rate of school enrolment, 98% in elementary education, in 2009-2010 [3], the vulnerable categories of children (especially the Roma and HIV-infected children) are still confronted with difficulties in their access to education.
Even if in the system of education the number of children enrolled is high, there are still enough children, most of them coming from Roma or poor communities, who do not attend school at all or who abandon
school before completing obligatory education. A rather low importance is granted, in many cases, to early education too; as a result, many children do not even attend kindergarten. [4]

In Romania, it is considered that the school curriculum is rather charged and rigid, and it is necessary to re-evaluate it in accordance with the requirements of a modern education, so that it could help students and pupils learn and develop life abilities: to think independently, to work in a team, to learn what self-respect and care for the others mean, to be creative, to learn how to cope with stress etc. In this respect, UNICEF stresses the necessity to modify school curricula and to implement certain measures meant to increase the degree of school attendance, including for those who come from disadvantaged environments. [4]

On the other hand, the number of pupils afferent to one teacher in the primary education was, in 2010, of 16 pupils / teacher, and of 13 pupils / teacher in middle school. [3]

Although the number of the pupils and students afferent to one teacher (ISCED 1) has dropped in the last years in most EU countries – the most accented decreased being recorded in Malta (from 19 in 2004 to 9.4 in 2009), at the opposite pole we find France (where the number of pupils / students / teacher increased from 19.4 to 2004 to 19.7 in 2009) – Romania showed an insignificant progress, as we see a small reduction of the number of pupils afferent to one teacher, from 17.8 pupils / teacher in 2004 to 16.4 pupils / teacher in 2009. [5]

Consequently, along with health, we should consider also the quantity and quality of basic education received by the population. Although it was found that the employees who have attended only some primary / elementary education can perform only elementary tasks and adapt with more difficulty to the advanced production techniques and processes, primary / elementary education is still very important. [6]

Beside primary education, a crucial part is played, in today’s economy and training of labour force, by higher education and lifelong learning.

In this respect the state has also an important role. Through the policies it applies, it can encourage or not the enrolment in higher education. On the other hand, in Romania, population’s rather low incomes do not allow the relocation of the potential students to the place of schooling, even if some students benefit of higher education gratuity, for some of them, the expenditure for accommodation, meals and transport are overwhelming.

At the same time, for the optimum deployment of studies, we need an appropriate material endowment, investments in the books fund, access to databases, adequate wages for teachers. All these generate quality in the field of education, and consequently a well-trained labour force, which influences productiveness, competitiveness and finally economic development.

In our country, before 1989, the system of higher education was totally under the state’s control, the number of education institutions was small, and the number of their students was established exclusively in a centralised manner.

In 1989, there were in Romania 46 higher education institutions, with a number of 164 507 enrolled students, with the predominance of technological institutes (mining, oil, mechanics), and less universities with complex structure: engineering, economics, law, agronomy, medicine etc. [7]

Starting with 1990, Romania has gone through a lot of changes in the entire society. In this context, reforms were applied also to higher education, considered to be a society’s strategic domain. Actually, higher education throughout the world is undergoing a continual transformation.

Since 1997, Romania has aligned to European requirements, both through the participation in the Lisbon conference, and through the implementation of the decisions made during this conference, the stress being laid on the international recognition of specialisations / qualifications in higher education.

Thus, if we refer to the data from two decades ago, access to higher education has witnessed an impressive statistic growth.

The number of higher education institutions has increased from 48 (in 1990) to 108 (in 2011) and consequently the number of programmes of study has also increased.

In 2011, from the total 108 higher education institutions, 91 were accredited (56 public and 35 private) – (Annex 2 to OMECTS no. 4072/21.04.2011).

Obviously, along with the increase of the number of public universities (both public and private), the number of students enrolled in a form of higher education has also grown spectacularly, three times actually, from 192810 students (in 1990) to 673001 students (in 2011). Furthermore, the number of foreign students who study in Romania has almost doubled during the analysed period, reaching the figure of 16138 students in 2011. [3]

Thus, education (as well as health) should constitute one of the primordial fields of a society; however, in the case of Romania, they are the domains allotted the lowest GDP percentages.

According to the National Statistics Institute of Romania [3], the public expenditure destined to education, as percentage of the Gross National Income (GNI) – calculated for 2009-2010 – is the lowest in the Union (although no data for Germany, Luxembourg, Greece, Poland and Slovenia are available).
Whereas Romania allots 3.6% of the GNI to education, countries such as Cyprus and Denmark allot over 7% of GNI (7.9% and 7.7%), Belgium, Sweden, Ireland, Finland and Estonia allot over 6% of GNI.

This discrepancy between Romania and the other countries of the European Union, as regards the public spending destined to education, was obvious several years ago too.

In 2001, according to the Eurostat data (2013), the weight of the public spending destined to education in the EU was of 4.99% of the GDP. In this respect, the highest percentages were recorded in Denmark (8.44%), Sweden (7.06%) and Finland (6.06%). In that year, the percentage of public expenditure destined to education in Romania was only 3.25% of the GDP, being one of the lowest in Europe.

In 2009, according to the same source, the weight of the public expenditure destined to education in the EU was of 5.41% of the GDP. The highest percentage of the GDP destined to education was allotted in Denmark again (8.72% of the GDP), followed by Cyprus (7.98% of the GDP), Sweden (7.26% of the GDP), Finland (6.81% of the GDP), Belgium (6.57% of the GDP), Austria (6.01% of the GDP); at the opposite pole we find Bulgaria (4.58% of the GDP), the Czech Republic (4.36% of the GDP), Romania (4.24 % of the GDP), and Slovakia (4.09% of the GDP), whereas no data were available for Greece and Luxembourg.

Moreover, the public and private annual expenses destined to education institutions indicate an average of 6503.9 PPS/pupils and students, in 2009, in the EU, and they were in Denmark of 9113.6 PPS/pupils and students, approximately four times higher than in Romania (2386.2 PPS/pupils and students) – figure 1.

![Figure 1: Annual expenditure on public and private educational institutions per pupil/student (2009)](http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tps00067&plugin=1, accessed on 21.02.2013)

The quality of higher education and professional training are essential for any economy, if we want to drive the chain of value beyond the mere manufacture processes \[8\]. Thus, globalisation imposes countries to prepare well-trained workers, able to rapidly adapt to the environment changes, irrespective of the economy where they operate. A worker with ample knowledge in a certain domain will be able to adapt to the conditions imposed by diverse companies.

On the other hand, statistic data show a close connection between training level and degree of insertion on the labour market.

In this context, according to the Eurostat data, in 2010, in the European Union, only 53.8% of the high school graduates succeeded in finding a job, 73.1% of the higher education alumni and over 80% of the post-secondary education graduates. The discrepancy between the degree of insertion on the labour market depending on the training level is even more obvious in the case of countries such as Bulgaria, Hungary, Lithuania, Poland and Slovakia (figure 2).

In 2009, there were 19.5 million students in the European Union, and in countries such as the United Kingdom, Germany, France, Poland and Italy there were over 2 million students. These five countries, together with Spain, numbered over two thirds of the total European Union students. \[5\]

In our country, in 2009, there were 1,098,000 students, 57.3% being interested in social sciences, business and law, 17% in engineering and constructions, 7.8% in humanities and arts, 6.4% in health, 4.9% in mathematics and informatics, 3.2% in services and 2% in agriculture and veterinarian medicine.
Figure 2: Employment rate by highest level of education, age group 25-64, 2010 (%)
Source: Europe in figures - Eurostat yearbook 2012, p. 236

Finland, Belgium, Germany, the Netherlands, Sweden and Denmark continue to occupy top positions as regards higher education and professional training criterion (Table 1), a positive result of an intense stress laid on education in the last decades.
This offered labour force a series of competencies necessary to rapidly adapt to a continuously changing environment and put the bases of high levels of adoption of new technologies and innovation, Sweden and Germany being two of the most innovative countries. [9]

Table 1: Higher education and professional training: General competitiveness index in the European Union

<table>
<thead>
<tr>
<th>Country</th>
<th>Higher education and professional training</th>
<th>General competitiveness index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Points</td>
<td>Rank</td>
</tr>
<tr>
<td>Finland</td>
<td>1</td>
<td>6.18</td>
</tr>
<tr>
<td>Belgium</td>
<td>2</td>
<td>5.81</td>
</tr>
<tr>
<td>Germany</td>
<td>3</td>
<td>5.80</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>4</td>
<td>5.79</td>
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<tr>
<td>Sweden</td>
<td>5</td>
<td>5.75</td>
</tr>
<tr>
<td>Denmark</td>
<td>6</td>
<td>5.59</td>
</tr>
<tr>
<td>Great Britain</td>
<td>7</td>
<td>5.57</td>
</tr>
<tr>
<td>Austria</td>
<td>8</td>
<td>5.48</td>
</tr>
<tr>
<td>Ireland</td>
<td>9</td>
<td>5.30</td>
</tr>
<tr>
<td>Slovenia</td>
<td>10</td>
<td>5.20</td>
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<tr>
<td>Estonia</td>
<td>11</td>
<td>5.17</td>
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<tr>
<td>Lithuania</td>
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<td>5.15</td>
</tr>
<tr>
<td>France</td>
<td>13</td>
<td>5.14</td>
</tr>
<tr>
<td>Spain</td>
<td>14</td>
<td>5.02</td>
</tr>
<tr>
<td>Portugal</td>
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<td>4.98</td>
</tr>
<tr>
<td>Cyprus</td>
<td>16</td>
<td>4.98</td>
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<tr>
<td>Malta</td>
<td>17</td>
<td>4.93</td>
</tr>
<tr>
<td>Poland</td>
<td>18</td>
<td>4.92</td>
</tr>
<tr>
<td>Slovakia</td>
<td>19</td>
<td>4.90</td>
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<tr>
<td>The Czech Republic</td>
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<td>4.87</td>
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<tr>
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<tr>
<td>Luxembourg</td>
<td>22</td>
<td>4.74</td>
</tr>
<tr>
<td>Greece</td>
<td>23</td>
<td>4.74</td>
</tr>
<tr>
<td>Italy</td>
<td>24</td>
<td>4.73</td>
</tr>
<tr>
<td>Hungary</td>
<td>25</td>
<td>4.67</td>
</tr>
<tr>
<td>Romania</td>
<td>26</td>
<td>4.36</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>27</td>
<td>4.31</td>
</tr>
</tbody>
</table>


These points are calculated by the World Economic Forum based on the statistic data or data collected with the help of surveys. In the case of surveys, the answers to questions were placed on a scale from 1 to 7 (1 corresponds to the lowest score, whereas 7 corresponds to the highest score). For each question, the individual answers are aggregated on the country level, in order to obtain the score of the respective country. On the other hand, the data from statistic sources are standardised for the same range [1, 7].

Unfortunately, higher education and professional training represent another aspect where Romania was left behind. If in the European Union, in 2008, only a quarter of the population aged between 25 and 64 had higher education, in Finland, Denmark, Cyprus and Estonia the percentage of the persons with higher education was over a third. In contrast, in Slovakia, the Czech Republic, Italy, Portugal, Malta and Romania, less than 15% of the population aged between 25 and 64 had graduated from a form of academic education [10]

Actually, according to the National Statistics Institute of Romania [9], in the northern countries (ranking among the first in the competitiveness top depending on higher education and professional training), the gross rate of higher education enrolment was, in 2009-2010, among the highest in the European Union: Finland (91%), Denmark (77%), Sweden (72%). In Romania, although the number of students has increased almost three times in the last 16 years [11], the gross rate of higher education enrolment was, in 2009-2010, only 49%. On the other hand, although the number of students increased very much until 2010, “the population of higher education teachers has undergone a dynamics of sub-proportional growth or much slower”, which is reflected in the educational services, whose quality is depreciating. [11]

Indeed, beyond the quantitative dimension, a crucial role in the development of labour force is played by the quality of higher education.
Under these circumstances, the reforms related to the school curricula promoted through the Bologna process aimed at creating a European higher education domain able to facilitate students’ mobility, transparency and recognition of qualifications, promoting, at the same time, a European dimension of higher education [10], keeping in mind that some European university are among the best in the world.

Moreover, the Erasmus programme is one of the best known European programmes, being implemented by approximately 90% of European universities. Since its initiation in 1987, over 2 million students have participated in this programme, and by its expansion one aimed at reaching a target of 3 million students until the end of 2012. Erasmus became in 2007 part of the European Union’s lifelong programme and was extended to allow the placement of students in companies, the staff training in different organisations and especially the training of the academic staff. [5]

According to a report drawn up by the Romania Agency for Ensuring Higher Education Quality [11] on the basis of some enhanced analyses of the institutional evaluations results and of a series of objective and subjective data, Romania’s higher education, characterised by sub-financing from public funds, is confronted with a deficit of results’ quality, when compared to high-performance universities in Europe and “if we do not operate important and fast corrections in the system and in the universities we risk to have less and less performing universities, more and more diplomas, less and less individual professional competencies and eventually a chronic lack of European competitiveness.” [11]

We have witnessed lately a more and more extended application of the concept of the individual who invests in himself. [2] This concept not only refers to formal and professional training, but also comprises the set of actions related to investments effected in the family, under the form of the attention granted to pre-school children, preoccupation for an optimum health condition, investments in information regarding the labour market etc.

As regards lifelong learning, according to a survey [5], in 2011, in the European Union, the percentage of persons aged between 25 and 64 who benefited from lifelong learning was of 8.9%, this result being by 0.4% lower than the figures recorded in a similar survey conducted in 2006. The percentage of the population who participated in lifelong learning activities was higher among women (9.6% in 2011), whereas in the case of men it was only 8.2%. The countries with the highest recorded percentages were Denmark, Sweden and Finland (between 23% and 33%). At the opposite pole, the lowest rates of participation in lifelong learning were recorded in Bulgaria and Romania (less than 2%). Moreover, in Romania, the trend of the training offer is to focus more on programmes for general aptitudes (computer skills, foreign languages, accounting etc.) and less on specific aptitudes [12]

Consequently, lifelong learning represents an essential element for the development of the knowledge-based society, considered to be the main engine of competitive development. [13] However, the development of human capital is done not only through school education or investments in health condition, but also through professional training at the place of work, because, like the physical capital, the human capital can also suffer a “depreciation”. [2]

Regarding the professional lifelong training at the place of work, in 2010, (Eurostat, 2013c) in Romania, only 24% of the total companies have organised such courses, a lower percentage being recorded only in Poland (22%). At the opposite pole, we remark the very high percentage of the companies having organised courses of continuous professional training at the place of work in Austria (87%), Sweden (87%), the United Kingdom (80%), the Netherlands (79%), Belgium (78%), France (76%), Spain (75%), Finland (74%) and Germany (73%).

On the other hand, according to Eurostat, as regards the average of the time spent in training courses (hours / employee), in 2010, in Romania we recorded 15 hours / employee, much more than in the Czech Republic (9 hours / employee), Estonia (8 hours / employee), Poland (7 hours / employee), Bulgaria (5 hours / employee), Latvia (4 hours / employee), Lithuania and Hungary (4 hours / employee). The highest percentages were recorded in Luxembourg (19 hours / employee), Belgium (18 hours / employee), Portugal (17 hours / employee) and Slovenia (16 hours / employee).

The allotment of financial resources for education and training determines the enhancement of employees’ abilities and productivity, and these expenses made by different organisations, in the hope of future benefits, are considered investments. The amount invested in professional training generates the increase of human capital quality [1], considered active and dynamic sources of competitiveness increase.

Professional training constitutes an instruments meant to facilitate the transition towards a sustainable world and to value the human resources, the training programmes having the role to promote the development issues.

In Belgium, the weight of the expenditure for vocational training courses in the total of labour force cost was of 2.4% , in France 2.5% (the highest in the Union), Malta – 2.3 %, whereas higher percentages are encountered in countries such as Slovakia, Portugal (1.9%), Sweden (1.7%), Slovenia (1.5%), Finland (1.4%). In the United Kingdom, Poland, Lithuania, Bulgaria, Estonia and Italy, these expenses represented 1.1%, whereas
in Romania and Spain the weight of expenditure for vocational training in the total labour force cost was of 1.6%. Obviously, although the percentage is the same, considering that the labour force cost is much lower in our country than in the other countries, the absolute value of expenses for professional training is way lower in Romania compared to Spain, for instance.

3. Conclusions

Multiple studies reflect the close connection between the qualification level of human capital and economic growth, as well as the direct and indirect impact upon the economic system. The functioning of a modern economy requires the existence of a well-trained labour force [1].

Education, public awareness enhancement and training represent processes in which human capital may reach its maximum potential. They are essential for the promotion of sustainable development and for the valuing of the population’s capacity to approach the main issues related to society’s development.

The staff’s training level (neglected in many economies) is taken into consideration in the analysis of a nation’s competitiveness level, as professional training at the place of work ensures the constant growth of professionals’ competency, and their adaptation to economy’s ever changing needs.

The stimulation of training resulting in a well-prepared, flexible labour force (focused on lifelong education and higher education), and correctly paid at the same time, must constitute one of Romania’s priority objectives, in accordance with the objectives of the EU 2020 Strategy.

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