EDUCATION AND SUSTAINABLE DEVELOPMENT – A CONNECTION FOR THE FUTURE

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ABSTRACT: Nowadays, people are living in a continuous changing world, which faces a lot of difficulties, such as increased poverty, human-induced climate change, different diseases, natural disasters, etc. The challenges that humans have to face are not new, but they are important because the future of our society is connected to the way we solve our present problems. In this context, it becomes more and more obvious that the dimension and the importance of educational processes are crucial for the evolution of our society itself. Moreover, educational processes are the ones to tell us about the past and to shape the future, helping society to obtain a sustainable development. Starting from this point of view, this paper aims to emphasize the way education and sustainable development is influencing each other in the globalization era.

KEYWORDS: education, economy, education for sustainable development

JEL classification: A29, B20, F63

1. Context

During the time, human beings realised that the resources are not infinite and that economic activities may endanger the environment we are living in. Commitments were made in different conferences (see Rio+20) in order to obtain and sustain a green and fair economy, but crisis appearing in different countries (e.g. 2008 financial crisis) was the one to question the ability of the nowadays economics to offer the intellectual framework in supporting the challenge – to make economic agents more responsive to present and future problems.

Among the challenges we are facing, one can easily observe:
- Climate change and alter weather patterns (the rise of global temperature)
- Reduction of biodiversity
- Population growth
- Increased poverty in different areas of the World
- Ecological overshoot (the demand for natural resources have doubled since 1966 and it is today exceeding the potential of our planet)(WWF, 2012)
- Desertification and degradation of agricultural land and pollution
- Etc.

In this context, it becomes obvious the fact that education, in general, higher education, in particular, must provide the abilities and competences needed to create strong characters ready to find solutions in this kind of situations. Moreover, as Cortese affirmed „Higher education institutions bear a profound, moral responsibility to increase the awareness, knowledge, skills, and values needed to create a just and sustainable future. Higher education often plays a critical but often overlooked role in making this vision a reality. It prepares most of the professionals who develop, lead, manage, teach, work in, and influence society’s institutions.” (Cortese, 2003)

In the same time, one must take into account the fact that education is connected to economic growth and development. If we corroborate the saying "Man is the most precious wealth of a country," elaborated by some Chicago School economists with an adaptation of what Adam Smith stated in the eighteenth century - "A country is rich if it has rich / educated individuals", we reason, based on the literature review that between education and economic development there is an indestructible link. In a sort of "lessons for the future" famous economists – J.S. Mill, A. Marshall, G. Stigler, J. Mincer, G. Becker etc. - tried to decipher the meaning of education and to bring more light on the complicated relationship existing between the economic development and the education system development. (Badea, 2012)

2. Higher education and sustainable development

2.1. The role of education in the nowadays society
The history of economic thought emphasizes that great economists were preoccupied during the centuries in analyzing the connection between education and wealth, education and competitiveness, education and economic growth, education and economic development etc. Physiocrats, liberals, libertarians, socialists, etc. used qualitative and/or quantitative methods in order to show the importance of education in the future of a nation (Badea and Badea, 2014). During time, the access to different types of education was not open for everybody. For a significant number of centuries, education was the privilege of the wealthy class, as it implied financial resources and in the same time it was a way to distinguish between the people coming from different social classes. History changed and with it a lot of aspects were improved in what concerns the education.

The role of education, in general, was widely recognized during the time: „Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues…It is critical for achieving environmental and ethical awareness, values and attitudes, skills and behavior consistent with sustainable development and for the effective public participation in decision-making” (UNESCO-UNEP, 1992).

Moreover, the role of formal education was emphasized in the literature, many years ago, as scientists have seen in it a panacea for a bright future: „With the coming of the modern age formal education assumed significance far in excess of anything that the world had yet seen. The school, which had been a minor social agency in most of the societies of the past, affecting directly the lives of but a small fraction of the population, expanded horizontally and vertically until it took its place along with the state, the church, the family and property as one of society’s most powerful institutions.”(Counts, 1931)

For example, in 1981 Richard Easterlin emphasized that the spread of formal school is that factor which seems to have preceded the beginning of modern economic growth. He pointed out that in 1850 very few people outside North-Western Europe and North America had any formal education, as it implied different types of resources and it also implied a type of habit of mind in which education was mostly for wealthy people (Easterlin, 1981 in Badea and Badea, 2014).

This kind of research is very important for emphasizing the ways society has changed and the way it is still changing. Thus, starting from Richard Easterlin findings, Philip Stevens and Martin Weale (2003) showed the fact that most of the present developed economies are the same ones that were developed many years ago (in the nineteenth century), as they were the ones encouraging population to study. The authors show the fact that between development and education there is a very important link.

Figure 1, realized by Stevens and Weale presents the expansion of primary education measured as the enrolment rate per 10000 population (Stevens, 2003 in Badea and Badea, 2014).

![Figure 1. Primary School Enrolment Rates](source)

Figure 1 presents UK, France and Germany among the countries with a significant primary school enrolment rate in the nineteenth century. As many other economists, Stevens and Weale ask themselves whether the high level of GDP in France, Germany and the UK is a consequence or a cause of the high level of education, as there can be seen a vicious circle – countries with a high level of GDP offer people a well constructed and financed educational system, but in the same time, educated people are more efficient, so they become a factor for growing the GDP.
Figure 2 (realized by the same authors) suggests that high levels of GDP per capita are associated with high levels of primary school enrolment some thirty years earlier. This figure can be used in order to better understand why some countries like UK, Germany or France have nowadays developed economies, while some other are still struggling to survive.

Figure 2. Education and GDP per capita
Source: Stevens, P. and Weale, M., „Education and Economic Growth”, 2003

Thus, some studies left the path of analyzing the connection between education and other issues from a mostly qualitative perspective and aimed to quantify the role of education. Much of the recent studies are highly technical as the authors use formal econometric models in order to test hypotheses using empirical data. In the following table, which is not exhaustive, there are some examples.

Table 1. Studies concerning the economic importance of education

<table>
<thead>
<tr>
<th>Authors</th>
<th>Study</th>
<th>Role of education</th>
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<tbody>
<tr>
<td>R. Barro (1991)</td>
<td>„Economic growth in a cross section of countries”</td>
<td>In the 90s and not only, many models started from the observation made by R. Barro (1991) and used as a variable with significant influence for the economic growth the secondary education for both developed and developing countries (Barro, 1991).</td>
</tr>
<tr>
<td>K. Murphy, A. Shleifer and R. Vishny (1991)</td>
<td>„The allocation of talent: Implications for growth”</td>
<td>Higher technical education influences a greater growth than higher education in law (Murphy et all., 1991)</td>
</tr>
<tr>
<td>S. Englander and A. Gurney (1994)</td>
<td>“Medium-term determinants of OECD productivity”</td>
<td>A 1 percentage point increase in secondary school enrolment rate is associated with around 1.5 percentage point increase in productivity growth (Englander and Gurney, 1994)</td>
</tr>
<tr>
<td>E.A. Hanushek and D.D. Kimko (2000)</td>
<td>„Schooling, labor-force quality, and the growth of nations”</td>
<td>The scores obtained in the international tests in mathematics and science represent indicators of the labor quality, and these scores are strongly positively correlated with the economic growth (Hanushek and Kimco, 2000).</td>
</tr>
<tr>
<td>A. Bassanini and S. Scarpetta (2001)</td>
<td>„The driving forces of economic growth: Panel data evidence for the”</td>
<td>A 1 percent increase in human capital stock is associated with a 0.57 percent increase in GDP At the sample mean, an increase in average</td>
</tr>
</tbody>
</table>
OECD countries’ education by one year would raise output per capita by ca. 6 percent (Sianesi and Van Reenen, 2003; Bassanini and Scarpetta, 2001).

M.G. Colombo and L. Grilli (2005)
„Founders’ human capital and the growth of new technology-based firms: A competence-based view”
In the case of the growth of firms, the number of graduates of scientific and technical studies has a significant positive effect (Colombo, M. G. and Grilli, 2005 in Badea and Rogojanu, 2012).

„Can higher education foster economic growth?”
Growth is more pronounced in countries where there are well-developed higher education systems (Richard, 2006 in Badea and Rogojanu, 2012).

N.S. Tiago (2007)
„Human capital composition, growth and development: An R&D growth model versus data”
There is a direct link between the rate of enrollment to engineering, mathematics and computing studies and the economic growth. (Tiago, 2007 in Badea and Rogojanu, 2012)

C.L. Tsai, M.C Hung and K. Harriott (2010)
„Human Capital Composition and Economic Growth”
A country should encourage high-tech fields of study because the percentage of graduates in science, engineering, mathematics and computer science is an important indicator for determining the quality of the workforce (Tsai, 2010 in Badea and Rogojanu, 2012).

Apart from numerous studies and econometric models built over time to demonstrate the link between education and economic growth, some scientists tend to analyze the role of a different type of education – the one suit for a sustainable development.

2.2. Education for sustainable development

Economists and not only tried to find a definition for what sustainable development means. Many definitions were presented, but we tend to present the one elaborated by UN: “Development which meets the needs of the current generation without compromising the ability of future generations to meet their needs” (UN,1987).

This definition includes the main pillars of sustainable development: economic, social and environmental aspects are the one to be linked in an optimal way. "Each one of the three pillars carries similar importance in creating and maintaining stability and balance. People, the planet and profits are all inextricably linked and interdependent, and must therefore be synchronized accordingly” (OECD, 2007).

During time, there were developed some models in order to coordinate the three pillars of sustainable development (OECD, 2007):

- The Triple Bottom Line
- The Natural Step Model
- Five Capitals Model
- I=PCT model (Impact = Population * Consumption/person * Impact/unit of consumption)
- Etc.

Although there were developed models and frameworks, there is still work to be done in order to obtain a sustainable development. The first step to be made is the field of education, as it has a very important role in shaping the future, as United Nations underlined, by declaring the period 2005-2014 as the Decade of Education for Sustainable Development (DESD). Moreover, the literature introduced the concept of education for sustainable development, which is different of education about sustainable development. Education about sustainable development means awareness raising, theoretical discussion, while the education for sustainable development uses education as an instrument for achieving sustainable development.

Education for sustainable development (ESD) „can be seen as the total sum of diverse ways to arrive at a ‘learning society’ in which people learn from and with one another and collectively become more capable of withstanding setbacks and dealing with sustainability-induced insecurity, complexity and risks.”(UNESCO, 2009)

According to UNESCO, ESD „represents a catalytic process for social change that seeks to foster – through education, training and public awareness – the values, behaviour and lifestyles required for a sustainable future.” (UNESCO, 2009)

In the same time, one must see the fact that “the core themes of education for sustainability include lifelong learning, interdisciplinary education, partnerships, multicultural education and empowerment” (UNESCO, 2005 in Dewhurst and Pendergast, 2011).
The concept of “education for sustainable development” is surrounded by a lot of controversies. Some authors militate for using the concept of environmental education or other expressions (Badea and Serban-Oprescu, 2011). Some are analysing the concept from an ethical perspective, such as Jickling, who argues: “Education is concerned with enabling people to think for themselves. Education “for” sustainable development...or education “for” anything else is inconsistent with this criterion” (Jickling, 1992 in Badea and Badea, 2014). The goal of education is the optimal development of people, with an emphasis on autonomy and critical thinking. The analytical framework provided by Yves Bertrand and Paul Valois is useful to critically examine the discourse about education for sustainable development (Badea and Serban-Oprescu, 2011). They emphasize the fact that the ESD is related to: “competitive needs,” “education for productivity,” “human capital,” etc (Bertrand and Valois, 1992). Moreover, education is foremost perceived as a “central economic investment for the development of creativity, productivity, and competitiveness,” and as a transfer process where scientific and technical knowledge is favoured (UNESCO, 1992).

Currently, there is no universal model of ESD, but certainly such a model cannot be developed because, despite of the agreement regarding general concepts, there are some country-specific education approaches that vary as a result of economic development, religious or cultural aspects. Each country should set its priorities and actions, based on ecological, social and economic conditions, as education for sustainable development is a very important issue for both developed and developing countries (Badea and Badea, 2014).

Starting from the fact that countries are different, UNESCO developed a list with the main themes that must be developed when speaking about ESD (see figure 3).

![Figure 3. Main themes of ESD](http://www.unesco.org)

Starting from the current challenges, ESD practically requires a reorientation of the educational systems, policies and practices in order to make decisions and act in culturally appropriate and locally relevant ways to address the problems that threaten our common future. ESD means a wide access to educational systems. Actually, ESD means a healthy growth of national economies (Badea and Badea, 2014).

### 3. Instead of conclusions

Studies show that countries that have invested over time in the education system today are the ones reaping the rewards of development. Moreover, investing in education means not only economic growth, competitiveness, productivity etc., it means actually investing in people and, in the same time, in the environment. Although, education exists and supposes positive externalities, nowadays it must meet several challenges. First of all, education has to be shaped in order to conduct a sustainable development. Second of all, educational systems need to achieve a quality that stand to the test of international comparison, to improve the management and to be more responsible, to increase funding and to diversify the funding sources. Moreover, education is the one to offer solutions for present and future problems our world is confronting with.
These goals involve major changes in the domain of education, as we are at a crossroads: either we admit that it’s time for vigorous action to identify and stimulate the quality of education, where available, and to improve the quality, there where needed, or we preserve in a state of complacency, which may plunge us into a uniform consistency, characterized by a lack of perspective and competitiveness (Badea and Rogojanu, 2012). Meanwhile, people hope for the governments to solve all their problems and to find a universal panacea in order to solve all the solutions, but what all of us must realise is the fact that every change we have to made starts with us, as people and responsible citizens.

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