THE ROLE OF EDUCATION IN THE ECONOMIC DEVELOPMENT

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Abstract
The purpose of this paper is to examine the role of education within economic development in order to highlight the stage of knowledge (theoretically and practically) and to assess the advances in terms of scientific research. Examining the dynamics of scientific studies, one observes that specialized literature has been enriched with extensive theoretical and empirical debates; most of research has evolved reference analytical schemes essential for identifying and quantifying the impact of education on development; nevertheless, the analysis reveals that prior research presented certain limitations that have become challenges for further debates. Based on a synthesis (descriptive and critical) of the principles, stages and phases, methods, techniques and tools of investigation and knowledge, the study suggests that we are witnessing a progress at the level of scientific research and implicitly, an enactment of more and more complex methodologies.

Keywords: education, economic development, economic growth, developed countries, developing countries.

JEL Classification: O11, E60

1. Introduction
The role and importance of education is revealed in the most diverse sectors and in a great variety of forms. Synthesizing the writings on this subject, the following ideas emerge:

a) economically and socially, education is the incipient form of professional qualification of workforce; the level and qualification of labour force determines the increase in labour productivity and, consequently, the national income (according to estimates, 15-25% of labour productivity growth is due to the quality and level of qualification); social and professional mobility is directly dependent on the educational system and the practice of social relations and establishment of quality and lifestyles are influenced by the level and quality of school;

b) at the scientific, technical and cultural level, vocational education is the main transmitter of scientific, technical and cultural knowledge, unequalled by any other social subsystem in importance and quality; the performances of scientific and technical research, of cultural creativity are foreshadowed by the quality of education; education, along with other educational factors, shapes the human personality by activating specific values.

The studies on this particular topic analyze the role of education on economic growth, progress and economic and social development. During debates we have observed that economic growth, progress and development are given identical significance, being associated with the tendency (in the long-term) of national income growth and the increase in production capacity, production volume and economic potential [22]. However, viewed individually, the three phenomenologies have their own characteristics of manifestation. Economic growth means a rise in the total amount of goods and services in a society, at a given time (one of the most commonly used indicators to measure the rhythm of economic growth rate is represented by growth rate of gross national product, also called “growth rate “ of the economy). The economic progress generates social progress, shown in a significant increase in the tertiary sector, resulting in a very high standard of living, maintaining it stable for a long time. The economic development highlights the multitude of quantitative and qualitative changes that occur in the social and economic structures as well as in the way of thinking and in the economic behaviour of people.

Hence, economic development involves adjusting the functions of educational institutions. Within the so-called ‘traditional societies’ education refers mainly to the transmission and reception of knowledge, the formation of public opinion, to maintaining a broad social consensus. In the course of time, new features of
educational institutions have appeared and taken on a special importance. Such a function relates to the educational institution as a recruitment and distribution agent of an individual or group of individuals towards different economic roles or positions within the social structure. Therefore, both in developed and developing countries, education has become a variable with profound influences on the progress of human society, facilitating and, also, preventing the economic development [9].

In today’s society, school system has a privileged place due to its particularity and that is its double potentiality: production and management. Production of human resources means both professional and citizenship training, ultimately, done through actions on the human capacity to process information, as well as bio-hards that support it [29]; generically called investment in intelligence, this allocation of resources is considered the most profitable and longest a nation could assume. Therefore, human resources act as creative force of value (i.e. use value) which is decisive in labour process. They provide efficient combination of the other resources required to create goods and services for production and consumption. Education enables people to create value by themselves, to improve their quality of life and creates social benefits for individuals as well as for society [28]. At the same time, education is a prerequisite for boosting people’s productivity and creativity, promoting entrepreneurship and technological advances. In addition, it plays a very crucial role in securing economic and social progress, improving income distribution.

The main objective of this study is to analyze the evolution of debates on education’s role in the economic development and to reveal the advances in scientific research. The underling method of this paper was the comparative analysis of the most representative works in the field. The element of originality that we assume is the achievement of a synthesis (descriptive and critical) with reference to the principles, stages and phases, methods, techniques and tools of investigation and knowledge of education’ central part in the economic development.

The reference we have in order to define the of this study were: time reference point (having as aim the evolution in time) and content reference point (focused on the new contributions to research). As a result, the study is organized as follows: section 2 presents the stage of knowledge (emphasizing the evolution and relevance of specific research); Section 3 presents a series of own reflections on the researched phenomenology; last section summarizes the results and suggests some conclusions.

2. The evolution and relevance of specific research

Without focusing the attention on the issues addressed, the father of Economics, Adam Smith (1776) highlighted the contribution education has on people’s productivity pointing out that a highly skilled and educated man can be compared to one of the machines (fixed capital), and the expenditures on his training can be recovered through profits at any time [32]. Associating the factor “work” with “capital”, a new concept emerged – human capital (understood as a summation of skills people have been endowed with or have acquired them through investment in training and education, making them more productive in their work).

For a long time, Adam Smith's ideas about human capital have been largely overlooked. His reflections became more intense only when people started to compare the living standards in different parts of the world.

Before the 19th century, systematic investment in human capital hasn’t been paid the proper attention in all countries. This changed radically with the awareness of science’s role in the development of new products and with the extension of preoccupations with identifying the most efficient methods of production.

Research on human capital has spread extensively after World War II, as a consequence of plans to support war-devastated regions (Western Europe, Japan), but also other underdeveloped regions (Africa, Asia). These plans involved capital and technology transfers, whose efficiency and purposefulness were strictly dependent on the level of education of the local population that employed them. At the same time, research in the United States has come to the conclusion that, historically, over 40% of the growth of per capita income in this country is a result of educational investment [9].

This early evidence on the role and importance of education/educational system to the economic development has not fully emphasized the interrelationship between the two public policies: educational policy and socio-economic development policy. Although it has been shown that an increased investment in education is beneficial (both in developed countries and in less developed countries), there hasn’t been yet identified an instrument of choosing an optimum investment alternative and the ways education actually contributes to the development process haven’t been clearly mapped out.

In the early '60s, when studies on human capital began to develop, the first premises of this fundamental issue started to crystallize themselves. C. A. Anderson and M. J. Bowman [1] formulated the hypothesis that primary education (responsible for society literacy) has a greater impact on economic development than secondary or tertiary education. This perspective proved to be flawed, human experience having shown that it is not enough to develop primary education (which provides little and general information) in order to achieve economic development.
F. H. Harbison and C. A. Myers [21] created a system of indicators to emphasize the importance of secondary and tertiary education on economic development. Although the use of these indicators did not produce the expected effects (leading to a great discrepancy concerning the funds allocated to primary, secondary and tertiary education), it was postulated that primary education was just a supplier for secondary education and that technical and scientific training (achieved in secondary and tertiary levels of education) would have a greater contribution to economic development. Though it has been subsequently shown that these results did not have an adequate basis, the work represents a starting point in this research field.


In Romania, in this area of interests, educationalists such as Stanciu Stoian (with the work *Education and society*, 1971) and Emil Păun (with his doctoral thesis *Education and its role in socio-economic development*, first published in 1974) are to be noted. These studies have highlighted the role of education in fostering economic development, education/educational system being perceived as an investment and not just as a consumption factor.

Early researches on the role of education in economic development did not clearly state how school system affects individuals to become more productive and did not either study enough those non-quantifiable effects that indirectly contribute to economic development. These aspects were later examined, being worthy of mentioning the works written by D. C. McClelland and D. G. Winter (1969), A. Inkeles and D. B. Holsinger (1974) and J. R. Goody and I. Watt (1968). They pointed out that education induces changes in the attitude of society members, which produces direct effects on development. McClelland and Winter [26] were able to prove that the historical periods of socio-economic development have been accompanied by an increase in “need of accumulation” of the population, which can only be satisfied through education. At the same time, A. Inkeles [23] suggested the idea that the “modernisation of the society” could not be possible without an appropriate individual approach which is, in an overwhelming proportion, the result of education. In the opinion of A. Inkeles, the main contribution of education to the development of society is based on the ability to transform individual attitudes and values from “traditional” to “modern”. J. R. Goody and I. Watt [14] said that the existence of a tradition of literacy is essential for a “rational” attitude in any society, thus contributing indirectly to economic development.

In the late 70s and the early 80s a new vision of *education-economic development* binomial was shaped. This new approach, set by G. Psacharopoulos [31], was based on cost-benefit analysis and the rates of return analysis as well; the conclusions were the following: a) in all countries the rates of return are maximum at the primary level; b) in less developed countries the rates of return in education (which express the efficiency of this activity) are higher than in developed countries; c) the rates of return for the general educational system are higher than the rates of return for technical or scientific education.

The political implications of these conclusions are evident for both developed countries and the less developed ones. For both groups of countries, supporting the development of primary education and a more focused attention to secondary and tertiary education were mandatory due to the higher costs involved. At the same time, it was brought to people’s attention the danger of massive valorisation of tertiary education, where individual rates of return could be higher but the social benefits are insecure (for example, immigration of highly educated people to other countries).

Recent research has enriched the theoretical fundamentals by achieving a thorough empirical analysis that quantifies the impact of education on economic and social development. Using two sets of variables (dependent and independent), researchers have employed statistical models (mostly linear) to analyze the impact of various factors of influence on socio-economic development.

To illustrate, we should bear in mind a few of the outcomes derived from statistical modelling:
- M. F. Khorasgani (2008) has shown that higher education has a positive effect on economic growth [24];
- Analyzing education-economic growth binomial, J. Geraint (2006) showed that almost 50% of the variation in growth rates of different countries is attributed to education [12];
- J. L. Loening (2005) provided evidence that human capital variables explain more than 50% of the increase in production; in this context, secondary education contributed mostly to growth [25];
- R. Fogel (2004) integrated the research in the context of the impact that health and nutrition both have on economic growth [11];
- George Psacharopoulos and Harry A. Patrinos (2004) analyzed the returns on investment in education [30];
- A. van Stel et al. (2005) examined the effects of entrepreneurial activity on economic growth [34];
- Castelló and Domenech (2002) brought forth evidence of specific human capital disparities on economic growth [7];
- Ilhan Ozturk (2001) postulated that education is indispensable to economic development (and conversely, economic development is not possible without a good education); a balanced educational system promotes not only economic development, but also an increase in productivity, generating higher individual incomes per capita [28];
- Grossman and Helpman (1989) showed that knowledge acquisition affects country's trade performance and, implicitly, competitiveness [15]; using a reverse correlation analysis Ben-David and Loewy (1995) proved that in its turn, trade improves the accumulation of knowledge, particularly through imports; to support any kind of knowledge accumulation, a country must be outward-oriented [4]; a World Bank study revealed that the rates of economic growth in a sample of 60 developing countries, during the period 1965-1987, were particularly high where there was an optimal combination of education, macroeconomic stability and openness [33];
- Bourguignon and Morrison (1990) suggested that an increase of one percent in labour force having at least secondary education would lead to an increase in low incomes by 40-60% and the average incomes by 6-15% [6]; in the context of education-income analysis, Bourguignon (1995) also performed an investigation of the factors that determine the distribution of incomes in 36 countries and discovered that there is a significant correlation between the two indicators [5];
- Motivated by doubts regarding the role of education and human capital in the economic development, Eric Hanushek and Ludger Weßmann (2007) have brought to light evidence to support the following ideas [16]: a) the quality of education has strong effects on the individual’s income (income distribution) as well as on the economic growth; b) public policies should pay more attention to the quality of educational system (particularly in developing countries); c) some schools create value-added better than others; these conclusions derive from previous researches results concerning the impact of changes on the institutional structure, the financial support being fundamental to improve school outcomes [8], [2];
- Eric Hanushek (2013) analyzed the role of human capital to support the economic growth and development of countries [17]; by focusing the analysis on the developing countries, he showed that without improving the quality of education in the developing countries, it will be difficult to boost the long term performance of the economy; the same author has also conducted other notable analyses such as: a) the role of cognitive skills on economic development [18]; b) international economic disparities impact on educational outcomes [19]; c) assessment of the extent to which the school outcomes are important in OECD countries [20];
- Investigating the period 1950-2010, Robert J. Barro and Jong-Wha Lee (2010), provided a substantial set of data on education results in several states [3];
- Analyzing the relationship between growth and human capital, Daniel Cohen and Marcelo Soto (2007) contributed to the construction of a specific database and pointed out the link between the quality of database and the relevance of the research results [10];
- Paul Glewwe, Eric A. Hanushek, Sarah D. Humpage and Renato Ravina (2013) conducted a synthesis of the specialized literature (developed in the period 1990-2010) centred on the issue of school resources and educational outcomes in developing countries [13].

Synthesizing the preceding ideas, it appears that these issues have intensified, moving from a global analysis (the role of education in economic and social development) to more specific analyses focused on the correlations that exist between education and economic growth, productivity, foreign trade, incomes etc. (the latter concepts being taken as variables of the economic and social development of a country). This allows us to observe that individual and correlational research of the effects of education has always been a major concern for both theory and practice.

Without claiming to detain unity in diversity principle, we admit that the specifics of the research on this topic defines itself in the way the following stages have been explored and assumed: (a) formulation of hypotheses; b) statistical modelling, respectively the equational representation of the relations between the two variables (education and economic and social development); We are witnessing a continuous adequacy of the theories, or the introduction of new variables into analysis, either questioning the prior theories, or global social changes, or extrapolation possibilities of the research outcomes etc. Beyond this diversity of motives we must admit that these preoccupations have had a noble ultimate goal: contribution to the theoretical and practical research.

Within the context of changes that have marked the economic and social life in the last decade, we experience a reorientation of researches on the role of education in achieving sustainable development, which is a unique and a radical new challenge for the human society.
As research in the field has expanded over the years, we must state that in order to attain our goal we’ve taken into consideration a selection of the most representative researches.

3. Reflections concerning the researched phenomenology

Education enhances the stock of knowledge and skills of the individuals. Dependent on these two coordinates, individuals will be more likely to find a job appropriate to their training, to provide themselves an adequate income. To the extent that they find these work opportunities in their social environment, they’ll run their activities there, thus contributing to the economic development of the area. In the event that they do not find these opportunities, then they’ll migrate to other areas (rural-urban or urban-rural), other sectors (industry, agriculture, or vice versa) or other countries.

Therefore, education becomes one of the fundamental factors of development. No country can attain sustainable economic growth without substantial investments in human capital. By understanding and assuming the role of education, individuals will create not only individual benefits (private), but also social benefits (education part of the category of actions that produces positive externalities). The direct effects will be translated into an improved quality of life and social benefits to the advantage of the entire society. This is because education boosts people’s productivity and creativity, promotes entrepreneurship and technological advancement. In addition, it plays a very crucial role in securing economic and social progress, contributing to the improvement of income distribution.

Investment in education is necessary because economic and social development respectively education development, emerge as requirements of the overall progress of society. Although, in the long term, education contributes to the economic development of a country, stimulates progress and raises the standard of living of the population, investment in education (quality education) requires the allocation of substantial resources; identifying sources of funding education and, implicitly, its proper financing represents a challenge to the ruling political class.

One of the recommendations of the International Commission on Education in the XXI century is to establish “a set of indicators to highlight the educational system dysfunctions by linking various qualitative and quantitative information, such as the level of expenditures on education, the number of cases of dropouts, differences in access to education, the inefficiency of the various parts of the system, poor quality of teaching process, teachers' status, etc.” The aim of any public and social policy (education, health, insurance and social assistance) is to improve the people’s lives. This is because people’s productivity is due not only to the socioeconomic system or the quality of technologies they use, but also due to the education and training which they come with at their workplace. Therefore, the investment in education (educational system) increases individuals’ chances of success in the labour market, contributing to the socioeconomic development of a country. Reality has proved that no country has achieved constant economic development without substantial investment in human capital.

A real challenge in this field is the quantification of efforts and effects, the basis for the efficiency assessment of the allocation resources for educational investments as a prerequisite to identify the impact on economic and social development. While efforts are easier to quantify (because they take the form of public or private costs and opportunity costs – understood as the costs associated with abandoning to conduct a directly productive activity in favour of training), effects quantification is more difficult precisely because of the existence of non-quantifiable variables. Even in this context, combining qualitative with quantitative methods, researchers were able to surmount this issue.

The evidence to support this theory is the research itself aiming at nonquantifiable effects of education, focused on two main levels: the relationship between education and political system and the relationship between education and population growth. Studies conducted until now suggest that education contributes to economic development only in case of a democratic political system, which ensures a fair and normal power transfer; research has provided evidence for the developed countries, revealing that political stability (associated with a normal power transfer and a low level of violence) is positively correlated with high levels of education. With regard to the second level of research, it is clear that, despite numerous social sciences research on the role of education in the development of a society, its implications (education) are not so obvious. The explanation lies in the fact that one of the weaknesses of the development plans was (and continues to be) the inadequate foundation of educational policies that were to be implemented (whose adoption was mainly based on the political criterion, ignoring the criteria of efficiency, necessity and opportunity and neglecting potential imbalances that were to occur).

Although our priority has been to identify the role and the importance of education to economic and social development, we are aware that the negative effects of under/over-education should not be overlooked.

With regard to the negative effects of under education, the overarching idea accepted as valid is that lack of education and appropriate professional training alike have negative effects (both on the individual and the
community to which he belongs), resulting in the discrepancy of income obtained by individuals who have received education unlike other people; social exclusion of individuals who have not benefited from education (leading to non-participation in the economic, civic and social life of an individual in the long term), respectively exclusion from labour market.

Although, at first glance, it seems difficult to accept, we should not overlook the research of the negative effects of over education. In the developed countries, the post-war expansion of education was associated with rapid economic development. Demand for high skilled workers (educated) kept pace with labour supply and, therefore, individual and social rates of return were relatively constant. However, as the rates of economic growth decreased, there was a significant decline in rates of return, especially for tertiary education. It was obvious that labour force was “overeducated” and there has been some scepticism about further investments in education, at least at the level reached until then. Reality has shown that, in the developed countries, the current issues and concerns about education had been anticipated at least a decade ago by the less developed countries and the major negative effects of over education had brought about [9]: the effect of “gear wheel” and the effect on rural economies.

With regard to the first effect, the rapid development of science and technology have created an advantage for the people who have a higher educational training; this has led to an increase in the demand for higher levels of education (secondary and tertiary), but imposed an increase in the minimum level of education needed to occupy job positions; there were immediate consequences: exclusion of less educated from their jobs by individuals with higher education and the increase in competitiveness when employing people with higher education.

As regards the second effect (effect on rural economies), the reality has revealed that in countries where the majority of workforce is concentrated in the subsistence agriculture, educational expansion has “contributed” to the decline of rural economy; Moreover, labour force migration to urban areas, not only diminished the work force necessary to carry out agricultural activities, but also reinforced labour market competition in urban areas (generating frictional unemployment). Nowadays, the migration phenomenon is no longer confined to the urban/rural environments or the sectors of the national economy, but it goes beyond the borders of the country (as a result of the liberalisation of labour force, of capital and individuals at the supranational level).

The multitude of aspects, in which the role of education in the social and economic development of a country could be looked into, allow us to consider that phenomenology is an extremely complex and varies over time due to changes in global society and the pressure of specific risk factors. These coordinates have been the foremost rationale that have driven our preoccupations towards research.

4. Conclusions

The study presents the evolution of theoretical and empirical research on the role of education in the economic and social growth/development. In light of the issues addressed in this paper, we consider that the study has a double utility:

a) scientific, as it presents the stage of knowledge in this field and contributes to the advancement of scientific methods designed to predict the impact of education on development; on order to ensure the progress of research there hasn’t been a strict limitation to negative heuristics (based on denial, rejection, criticism), positive heuristics has also been observed, it completed and improved the theoretical fundamentals;

b) theoretical and methodological, as we have considered the contribution to the groundwork and operationalization of the education impact on the development as well as underscoring the importance of the research theme; methodologically, we have underlined the manner of presentation of research methods and techniques, identification and adequacy of working tools and interpretation of results.

The conclusion we reached is that, through the efforts of researchers, we have witnessed a breakthrough in scientific research and, implicitly, an enactment of increasingly laborious methodologies. The explanation can be attributed to: a) theoretical researches development – allowing the substantiation of new predictions, b) the increase in the number of independent variables that have been analyzed (including variables whose impact is more difficult to quantify) c) expanding the investigated sample and / or extending the analyzed period, d) the contribution of statistics and econometrics, which permitted us a more appropriate data processing to facilitate statistical modelling.

The final conclusion brought to light is that education is given a key role in the economic and social development of society through the quality of educated people (who will contribute to the growth of human intelligence stock, able to develop new technologies), on the one hand, and the transmission of knowledge and information, on the other hand.

The study constitutes a starting point for further research. Specifically, we consider the quantification of the education impact on economic development at national and European level.
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