

Education and Economic Development: Case of Bosnia and Herzegovina

Hatidza Jahic, MSc.

Senior Teaching Assistant
Department of Economic Theory and Policy
School of Economics and Business, University of Sarajevo
Email: hatidza.jahic@efsa.unsa.ba

Jasmina Osmankovic, PhD

Professor
Department of Economic Theory and Policy
School of Economics and Business, University of Sarajevo
Email: jasmina.osmankovic@efsa.unsa.ba

Abstract Analysis of the interdependence of education and economic development is a subject of interest of researchers for many decades. A large number of published studies, papers and books on the impact of education on the process of economic development has given us the necessary foundation of a multidisciplinary approach in research process of link between education and development. Objectives were as follows: elaborate educational system of Bosnia and Herzegovina and its institutional framework; present the benefits and costs of education and define the challenges and obstacles in the field of educational policy of Bosnia and Herzegovina. Assessment of the educational system and educational policy of Bosnia and Herzegovina as well as an overview of the educational system are given based on the findings of primary research and data from secondary sources. Secondary data used in research was obtained from reports and publications of domestic governmental and nongovernmental institutions, international organizations and others, while the primary data and analysis were obtained as a result of structured group and individual interviews. The study results suggest that education is an important factor of economic development and as such should be part of the economic policy of Bosnia and Herzegovina. Education should also be used as a factor of competitiveness, human development, integration and transition processes. This paper also presents recommendations for education policy in Bosnia and Herzegovina in which applicative contribution of the paper is reflected.

Key words: education, development, theory, policy, Bosnia and Herzegovina

1. Introduction

Process of economic development of each national economy depends fundamentally on the quality of its human resources and human capital. Education in this process plays a key role in terms of creation and development of absorptive capacity for creation of new knowledge and its transfer process. Including education in national development strategies and promotion of knowledge-based economy has become one of the most important trends in today's global world.

The aim of this paper is to analyze the situation in Bosnia and Herzegovina in this process through presentation of current situation in educational system and economic development of the country in order to give adequate recommendations for further improvement. Starting from the theoretical bases, research topic, previous research findings and established aims, the following research questions were formulated:

- How does the education effects development process in Bosnia and Herzegovina?
- Which are the most important challenges facing educational system in Bosnia and Herzegovina?
- Is there any specific educational level that could give bigger contribution to development process in Bosnia and Herzegovina?

For the purpose of research, relevant literature from disciplines such as economic development, economics of education, new development paradigm and others was used. Research findings are based on secondary data available in databases of World Bank (WB), United Nations Development Programme (UNDP), World Economic Forum (WEF), EUROSTAT as well as entity and state statistical agencies of Bosnia and Herzegovina. Focus groups were used to collect primary data from representatives of educational institutions, private sector and entity and state educational institutions. Most important findings from focus groups were identification of two important educational levels ie. secondary vocational education and

adult education, answering to our third research question. These two were pointed out as segments that could lead to elimination of gap between education and real economy, lowering unemployment and improving economic development. Findings from focus groups have led to individual interviews with representatives of educational and entity institutions.

The remainder of this paper is organized as follows: section two gives a brief and concise overview of literature analyzing interdependence of education and economic development, section three presents state of education in Bosnia and Herzegovina, while section four analyzes education and economic development in B&H. Finally, the concluding remarks and recommendations for educational policy of Bosnia and Herzegovina are given in section five.

2. Literature review

Achieving high levels of development through improvement of living standards, education and health services, fighting poverty and inequality are most important common goals of all of today's leaders. Human resources or human capital are understood as inputs in this process, leading to increased productivity, and income. Increased income will also increase savings and further investments in production inputs, ie. human capital. Today's conception of economic development gives to education a central role and believes that long-term and continuous investment in human capital has positive effects on economic and social development. Two ways of the economic contribution of education have been identified: directly through the improvement of current knowledge and the creation of new knowledge and skills leading to more efficient and effective transfer of knowledge from the educational system to the real economy and society as a whole and indirectly by reducing financial allocations for health, judiciary, social protection, etc. Education through direct contribution to economic development fulfills its economic function while through indirect contribution fulfills its social function.

Literature research has shown as that there are three most common approaches when analyzing education and its role in development process. The following table shows summary of all three with most important characteristics and key authors and/or institutions for each approach.

Table 1: Theoretical approaches in studying economic development and education with basic characteristics and key authors/institutions

Approach	Basic characteristics	Key authors/organizations
Human capital	<ul style="list-style-type: none"> - Importance of education, on the job training, health and adult education for productivity. - Focus on individual decision for further investment in education. Individual decision depends on future income and current cost of education. - Education and training influences innovation and creation of new products. 	Schultz (1961;1972;1974;1992) Acemoglu (2009) Becker (1962;1990;1992) Mincer (1974) Danison (1962) Lucas (1988) Nelson&Phelps (1966) Romer (1990)
Human development	<ul style="list-style-type: none"> - People are considered as real wealth of nations. - Enlarging people's choices and enhancing human capabilities and freedoms. - Creating an environment in which individual can develop its potential, creativity, interests and needs. 	Sen (1995;1998;1999) United Nations Development Programme (UNDP) publishes annually Human Development Reports (HDRs) with Human Development Indicators whose methodology for calculation is based on Amartya Sen's approach. First report was published in 1990.
Return on investment in education	<ul style="list-style-type: none"> - Based on measurement of the returns on investments and increased revenues and earnings. - Investment in education as any other investments has its costs and benefits. 	Psacharopoulos (1973;1981) Mincer (1973) McMahon (2002) OECD (1998;2001;2007)

There are three major changes in the conception of education that have occurred in the last decade, as compared to the previous understanding. The first change is reflected in the evolution of thinking about education. Earlier on education

was considered as acquisition of wisdom, then later as the process of acquiring knowledge, while a dominant view today is that it is a process that has as an end result only the acquisition of diplomas. Precisely because of this thinking, the holders of these diplomas do not have the knowledge and skills that these diplomas imply. Another significant change is reflected in the core of the educational system. The dominant systems in developing countries is a learning system based on facts or facts learning system. This system does not allow the acquisition of knowledge, skills and competencies that are needed and required in the labor market. In contrast to this system, education in developed countries based learning methods to solve problems (problem solving approach) which enables learning through solving various problems, cases, simulations, etc. Finally, another important change in education is the introduction of the concept of lifelong learning through formal, nonformal and informal trends.

Today, education is measured by OECD's specially developed tests¹ which are conducted on regular basis and therefore are comparative for countries were they are conducted. Besides OECD, UNESCO is another institution which plays and important role in promotion and measuring education through ISCED classification.

We can see from the above classification of theoretical approaches to role of education in economic development and from the understanding of education that it has changed in last decades, involving some very important international organisations and demanding in most of the cases an interdisciplinary approach. Analyzing domestic and regional literature we were not able to find and integrated approach used to analyze education and development in Bosnia and Herzegovina, making it an important motive for this research.

3. Educational policy and system of Bosnia and Herzegovina

The institutional structure of educational system in Bosnia and Herzegovina reflects the constitutional system of the country where the Ministry of civil affairs is in charge of educational policy at the state level. In essence, the duties of this ministry are very limited, and are concentrated in the institutions at the entity level, or the Federation of Bosnia and Herzegovina (FB&H) at the cantonal level, while in the Republika Srpska (RS) to the level of the Ministry of education and culture. Education department in Brčko District is educational institution in this part of B&H. The other two separate institutions are: Agency for standards and evaluation of FB&H and RS and the Agency for Pre-Primary, Primary and Secondary Education.

In order to have educational policy as a function of economic policy, existence of long-term commitment to the cooperation of economy and education system is essential in this process. It is necessary to make projections, planning and continuous analysis of necessary personnel for achieving long-term economic development and prosperity. In development planning process all interest groups should be included. Unified, coordinated and harmonized education policy in Bosnia and Herzegovina is of economic importance for the country. Such policy should have in focus quality of knowledge instead of the current importance of formal education. The objectives of the educational policy of Bosnia and Herzegovina should be:

- improvement of curriculums by introducing modern methods of knowledge transfer, practical training, use of technology etc.,
- orientation of the education system to the real economy in order to coordinate supply and demand on the labour market, monitoring needs of the economy, defined development and strategic country goals and
- promotion of scientific research through the identification of sectors where it is necessary to stimulate and support research and development.

The modified policy would create preconditions for establishing a system that not only would transmit knowledge to students but create new knowledge leading to increased quality of knowledge. Further development and strengthening relations between economic policy and the education system should go in the direction of strengthening the four axes, namely:

- National development strategy,
- Roles of chambers of commerce and employers in the education system,
- Employment agencies and bureaus and
- Educational institutions.

¹ PISA, AHELO, IEA and TIMSS are well-known international student's assessment tests. While all neighbouring countries have participated at least once in PISA test, B&H's participation in such tests is limited to TIMSS in 2007, making any comparative and critical analysis impossible.

When it comes to presenting results of such educational system, for the purpose of this research, overview of the system of Bosnia and Herzegovina is given using the defined objectives of the Poverty Reduction Strategy Paper (PRSP), achieved goals, then the current situation with the latest data available and the Millennium Development Goals for B&H. This data is given in following table.

Table 2: State of education

	Targets as in PRSP (2007)	Data achieved (2007)	2009 or latest available data	Targets as in MDGs	Progress towards 2015 targets
Percentage of children attending pre-school facilities	12%	6,4 %	9,9%	25%	Unlikely
Primary school net enrolment rate	95%	98,4% (data from 2005/6)	96%	100%	Potentially/Likely
Secondary school enrolment rate	75%	79,3% (data from 2005/6)	77%	85%	Potentially
Higher education enrolment rate	25%	25%	34% (data from 2008)	35%	Likely

Source: UNDP (2010)

Each of educational levels mentioned in table above faces certain challenges and problems making fulfillment of targets in 2015 and improvement in general hard to reach. These include the need to increase enrolment rates at all levels of education and stimulate cooperation between educational institutions and industry in the process of curriculum creation and enrollment policies which will suit the needs of local and/or regional economy (within Bosnia and Herzegovina). Representatives of educational institutions in the focus groups have stressed the need to simplify the institutional structure of education that would enable more efficient and effective funding pointing at the same time lack of awareness for training and applications to programs, projects and funds of the European Union that are currently available for Bosnia and Herzegovina. Another problem identified by the participants is disproportion between labour market and education. Taking into account that the highest unemployment rate is among the population with secondary vocational school certificate, participants have suggested the following: creation of professional orientation system in primary educational institutions, stimulation of cooperation between secondary vocational schools and local business community as well as further development and harmonization of legislation related to adult education system in entire Bosnia and Herzegovina.² Other problems that might possibly limit progress are issues concerned with the fact that secondary education is still not compulsory according to law, ongoing reforms in higher education, accreditation of higher education institutions etc.

The institutional framework of the educational system of Bosnia and Herzegovina is not completed. Institutions that are currently working due to limited resources and inefficient use of available financial and other resources are not guided by the principles of efficiency and effectiveness in its work. Role of education in development process in Bosnia and Herzegovina is not understood as strategic one.

²Despite the legal and financial obstacles, some schools in B&H were able to achieve remarkable results in the process of cooperation with local employers, namely: *Srednja turističko-ugostiteljska škola Mostar*, which has for its practical classes opened a restaurant and plans to open its own travel agency; *Saobraćajna i elektro škola Dobo*, which has participated with Republika Srpska railways in education of its workers; *Mjesovita srednja škola Tesanj* has so far cooperated with numerous domestic and international companies such as MANN HUMMEL BA dd and *Ekonomska škola Bijeljina*, which has been working with companies such as Bobar Bank and Spectar drink in the process of creating new curricula.

4. Economic development and education in Bosnia and Herzegovina

Effects and relations between economic development and education in Bosnia and Herzegovina have been analyzed through selected elements of competitiveness, human development and human capital. Human capital was analyzed using percentage of budget and GDP spent for education having in mind already proven higher returns on investments in human then in physical capital. Human development has been illustrated using Human Development Index (HDI), Education Index (EI), Income Index (II) and Life Expectancy Index (LEI), while competitiveness was analyzed using Global Competitiveness Index (GCI), innovations, higher education and training and brain drain. Competitiveness is understood as being able to exist and fight with competition on international (globalized) market and that is only possible if there is high degree of innovations and creation of new value which is at the end possible if there is high degree of investment in research and development and education in general.

Table 3 gives rankings of Slovenia, Montenegro, Croatia, FYR Macedonia, Albania, Serbia and Bosnia and Herzegovina in three segments explained above.

Table 3: Economic development and education in selected countries

Country	Human capital investment		Human development				Competitiveness			
	% GDP	% budget	HDI	EI	II	LEI	GCI	Inovations	Higher education and training	Brain drain
	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank
Slovenia	1	2	1	1	1	1	1	1	1	1
Montenegro	-	1	2	2	3	5	2	2	2	2
Croatia	3	6	3	3	2	3	3	3	3	4
FYR Macedonia	5	3	6	4	5	6	4	5	4	5
Albania	6	4	5	5	6	2	5	7	6	3
Serbia	2	7	4	6	4	7	6	4	5	6
B&H	4	5	7	7	7	4	7	6	7	7

Source: Investment in education, World bank database, data from 2002-2008; Human development, UNDP database, data from 2010; WEF database, data from 2010

Based on ten different rankings from Table 3 Bosnia and Herzegovina is in six categories ranked at the last position. B&H has invested in education 4,3% GDP and 10,9% of total budget in 2004 according to last available data from the World Bank. However, having in mind that B&H's GDP is one of the lowest in the region, investments in this sector and not high enough.

HDI value for Bosnia and Herzegovina in 2010 amounts to 0.710, which positions the country at 68 place out of 169 countries. According to this value, Bosnia and Herzegovina is located below the regional, but above the world average value of HDI in Human Development Report. However, if we analyze percentage change in HDI rankings of selected countries during last five years, Bosnia and Herzegovina has improved its position by four places. Situation in competitiveness aspect is the worst amongst the group of selected countries, ranking Bosnia and Herzegovina at the last position in segment of brain drain, higher education and training and GCI while in segment of innovations Albania is at the last position.

If GDP per capita or in our analysis Income index rose there would be improvement in human development, living standards and health services, which would lead to an increase in life expectancy, represented by Life expectancy index in Table 3. Increase in worker's productivity caused by improvements in educational quality and quantity³ is only factor which would influence income per capita. Bosnia and Herzegovina should seriously approach to process of decision – making in education considering high economic importance of this sector. Regardless the level of GDP per capita loss of human development can occur due to inappropriate policies and/or economic policy, inefficient use and allocation of available resources. This has been pointed out in section where institutional structure and educational system of Bosnia and Herzegovina has been elaborated.

Bosnia and Herzegovina is currently in the efficiency-driven stage of competitiveness where the most important role is played by higher education, namely: quantity and quality of education and on the job training. Of these three elements, only in the segment of quantity of education, Bosnia and Herzegovina does not have the lowest rank in the group of neighboring countries. According to the WEF, quality of education and training is the limiting factor of Bosnia and Herzegovina's competitiveness. Innovations that are closely associated with the educational system on one hand and the economy on the other hand, are poorly rated by the WEF. The real economy is not able to respond to market needs since the creation of new knowledge does not occur or it is very limited. At the other side, it is hard to talk about innovations in case where higher or tertiary education has only 10.8% of the population⁴, which is below the average of new EU member states, two times less than the percentage in the EU15 and approximately 19% less than new EU⁵ member states (ETF, 2007). Number of patent applications by residents in the period from 2004 - 2008 was the largest in Serbia and the lowest in Bosnia and Herzegovina. Number of patents applications can be considered as the most important outcome of the educational system of the country and the one that directly affects real economy. Incompetence and inability to innovate and create new knowledge is what leads to errors in the market system in the context that there is no increase in demand for exports abroad and production in general, leading to increase in unemployment. Export incapacity or the structure of exports is an indicator of lack of knowledge or quality of the education system, which confirms the hypothesis that lack of knowledge, skills, competencies as a result of insufficient quality of the education system, slows the development of the country. This is especially valid in case of Bosnia and Herzegovina since its exports are mostly based on raw materials and materials used in further production. Market failures in education can be solved by additional investment in adult education and lifelong learning, because in this way at least partially the problem of disparity between supply and demand for labor would be solved.

5. Conclusion

It is hard to view educational system in Bosnia and Herzegovina outside the political context and as a result of this situation, education system pays the price of the current constitutional order of the country. The complex structure of institutions and authority, lack of coordination of activities, lack of strong state structures, a high degree of decentralization are some of the most important shortcomings of the educational system of Bosnia and Herzegovina.

Theoretical background of the research was presented using three important approaches: human capital, human development approach and the theoretical analysis of investment in education through the costs, benefits and returns on investment. In the theoretical part we have identified human capital as one of the basic and most important inputs into the development process, which if is invested in a proper manner leads to productivity growth and higher levels of development. Primary research was conducted through group and individual structured interviews while secondary research relates to the use of secondary data sources including databases of the, UNDP, World Bank, WEF and other relevant database. Besides the interview method the following methods were used: method of analysis, synthesis, comparison, induction and deduction.

Linking secondary vocational schools and local employers is a good example of cooperation in the economic development function. Through our research we have identified adult education and secondary vocational education as segments that could contribute more to economic development in the future. Improving relations between economic policy and education should have in focus: national development strategy; roles of chambers of commerce and employers in the education system; employment agencies and bureaus and educational institutions. Quality of education,

³ According to Mincer, income per capita can increase by 5% with each additional year of schooling.

⁴ In 1997 around 11,9% of population in Croatia had degree in higher education.

⁵ Ten countries from 2004 enlargement are in this case considered as new member states.

lack of mechanisms for control and quality management makes education difficult to measure and evaluate. The modified policy would create preconditions for establishing a system that would not only transmit knowledge to students but create new knowledge leading to increased quality of knowledge.

6. Recommendations for education policy

Based on the conducted research we suggest the following specific recommendations for policy makers:

1. Continue the reform process at all levels of education, especially in secondary vocational education due to the large percentage of unemployed with secondary education. Also, secondary education should be compulsory.
2. Entire educational system should be more flexible and able to adjust to labour market. In that context: (1) partnership between education institutions and private sector should be stimulated at all levels. This would be very useful in process of curriculum creation; (2) keep a coherent labor market policy and education which would enable greater coherence and coordination of labour supply and demand.
3. Strengthening the educational structure at the state level that would be responsible to the Council of Ministers of Bosnia and Herzegovina. This is especially true for higher education with regard to the importance of this level of education which still requires the strengthening of institutions for quality control, certification and monitoring performance.
4. Increase investments in education because current investment in education are not sufficient to reach the development level of countries of the region.
5. Strengthening the institutional and legal framework for lifelong learning as a function of economic development and integration into the European educational space.

The education system as such is a "set of different systems" in context that the economic and social development of the country bears the cost of knowledge that does not suit the needs of the labor market and cost of young educated people leaving the country. It is necessary to have single education policy which will be adjusted to the needs of economic policy i.e. strategic development needs taking into account that countries, especially at higher levels of development are competing with knowledge and human capital.

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