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Changing Economic Paradigm of Europe with Knowledge Intensive Industries Services & Education

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Abstract

Global competitiveness depends on the possession of innovation and knowledge a country. It's reason why education, research, Innovation and technological development has taken a new meaning and significance. Knowledge and experience becomes very important factor of production in the countries economies. The education and qualifications of European Union (EU) population are the main assets of the EU, and a necessary condition to complete a global market.

The global competition of the computerized economy is concerned, the quality and the inventive human resources would be the main factors that make the difference between the countries of world.

Today Europe undergoes the changing economic paradigm. Future growth and social welfare will depend on knowledge- intensive industries and services. In this case more jobs will require a higher education qualification. Universities as well as Govt., Aided degree College and self financed colleges have the potential to play an important role in the Lisbon objective and to give for Europe the skills and competences necessary for knowledge based economy.

GDP(Gross Domestic product) increase or decrease best reflects trends of country economy development, when GDP increases, conditions for more resource allotment for education are established .

Education is recognized at the highest EU Level as an area for Co-operation between Member States. The Policy of Education is horizontal policy. It is close related with other EU policies . Research and technological development, Competitiveness, Industrial, Social and Common European Market development as well.

The development of knowledge society requires new attitude to European education policy finding and combining new ways of supplying knowledge in relation with other policies as well. Strategic goal of Lithuania National Education policy is to create effective and Cohesive, based on rational use of resources and education quality education system.

Keywords: **Education policy, knowledge society, knowledge-based economy, economic growth;**

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1. Introduction

Global competitiveness depends on the possession of innovation and knowledge by a country. It's a reason why education, research and technological development has taken a new meaning and importance. Knowledge becomes very important factor of production in the countries' economies. The education and qualifications of European Union (EU) population are the main assets of the EU, and a necessary condition to compete in global market. Member States are encouraged at all levels to strengthen their efforts in relation to education and training. However, not all national efforts in the development of training systems and adapting them to the knowledge-based economy is sufficient. A strategic goal was defined by Lisbon European Council in 2018 which is under way at European, national and local level. Europe is aiming at a more competitive economy with more and better jobs and social cohesion. Politicians at the European level have recognized that education and training are essential to the development of today's knowledge society and economy. New orientation for the policies regarding research, economic reforms, education and social protection were developed. The European Research Area and European Higher Education Area should provide new opportunities for development to all regions in Europe. The integrated projects are an instrument to support research, studies and training where the prime objective is to deliver new knowledge, relevant for European competitiveness or societal needs. The European research and technological development (R&D) policy, and education policy convened by Bologna Declaration aim for increasing international competitiveness and openness of the European system of higher education. The European Commission is drawing effectively on both Bologna and Lisbon to firmly constitute

— and reconstitute — higher education as a European policy domain .National research policies and education systems promote European dimension in higher education with regards to institutional co-operation, mobility schemes and integrated programs of study, training and research. The article analyses the human capital as a factor of production, accumulated by individuals through education and its impact in to higher production. Other important issue is high education impact on research, technological development and total factor productivity growth. The main aim of the article to exam the dynamics of European Union education policy, its relation and impact for economic development.

2. The development of European Union education policy

The global competition of the computerized economy is concerned; the quality and the inventive human resources would be the main factors that make the difference between the countries of the world (Iatagan, Dinu & Stoica, 2010). The statistics show that the European countries pay a special interest to the continuous training of the human resource, especially because of the specific differences among the human resources of the

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member countries. However, the history of European Community (EC) integration shows, that education policy passed different stages of the development. The education policy was not the subject of treaties establishing European Community: European Coal and Steal Community Treaty (1951) and European Economic Community Treaty (1957). The common policy of agriculture, transport, competition and trade were among the main objectives of European Economic Community Treaty. Since 1970 a shift from politico-economic to economic-functional goals and change in the method of policy-making from a semi-Community to an inter- or transgovernmental mode of policy-making can be noticed. It reflects the shift in policy aims, away from pro-integrationist towards pro-market orientation. This period is important for further integration of European Communities. The European Communities was influenced by a series of political crises, this created a period known as "Euro pessimism" (1973– 1986). The United Kingdom, Ireland and Denmark joined EC in 1973, Greece joined in 1981 followed by Portugal and Spain – in 1986. European Monetary System, including Exchange Rate Mechanism was established in 1979. The processes of integration influenced the principles of co-operation in education as well. In 1976 new principles of co-operation were adopted by education ministers under the first community action programme for education.

The main emphasis of education policy is on voluntary cooperation and aimed at:

- encouraging mobility of students and teachers, by encouraging the academic recognition of diplomas and periods of study
- promoting co-operation between educational establishments
- developing exchanges of information and experience on issues common to the education systems of the Member States
- encouraging the development of youth exchanges and of exchanges of socioeducational instructors
- encouraging the development of distance education (European Commission, Treaty on European Union). So, EU educational policy has centred on the promotion of universities 'cooperation. The development of EU

education policy influenced the structural changes in European Union institution as well. By 2010 a separate Directorate General of the European Commission was set up for education and culture. In 2010, following agreement within the Council of Education Ministers, the European Union's Education and Training 2018 work programme was launched in the frame of the Lisbon Strategy. Member states and Commission working in this way agreed on indicators and benchmarks to monitor progress through evidence-based policy making. In this framework, the Council in 2014 adopted five benchmarks, to be attained by 2018, to underpin this work of policy exchange.

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Five key benchmarks were planned by the year 2018 are:

- reading literacy: at least 20% fewer low-achieving 15 year olds than in 2000
- upper-secondary completion: at least 85% of 22 year olds
- maths, science, technology: at least 15% more graduates than in 2000 and better gender balance
- lifelong learning participation: at least 12.5% of 25-64 year olds
- Early school leaving: no more than 10% five key benchmarks (see Fig. 1).

Figure 1 shows overview on average performance levels in all five fields. The starting point in the year 2010 is set in the graph as zero and the 2018 benchmark as 100. The results achieved in each year are thus measured against the 2018 benchmark (=100). A diagonal line shows the progress required, i.e. each year an additional 1/10 (10% of total) of progress towards the benchmark has to be achieved to reach the benchmark. If a line stays below this diagonal line, progress is not sufficient, if it is above this line progress is stronger than needed to achieve the benchmark.

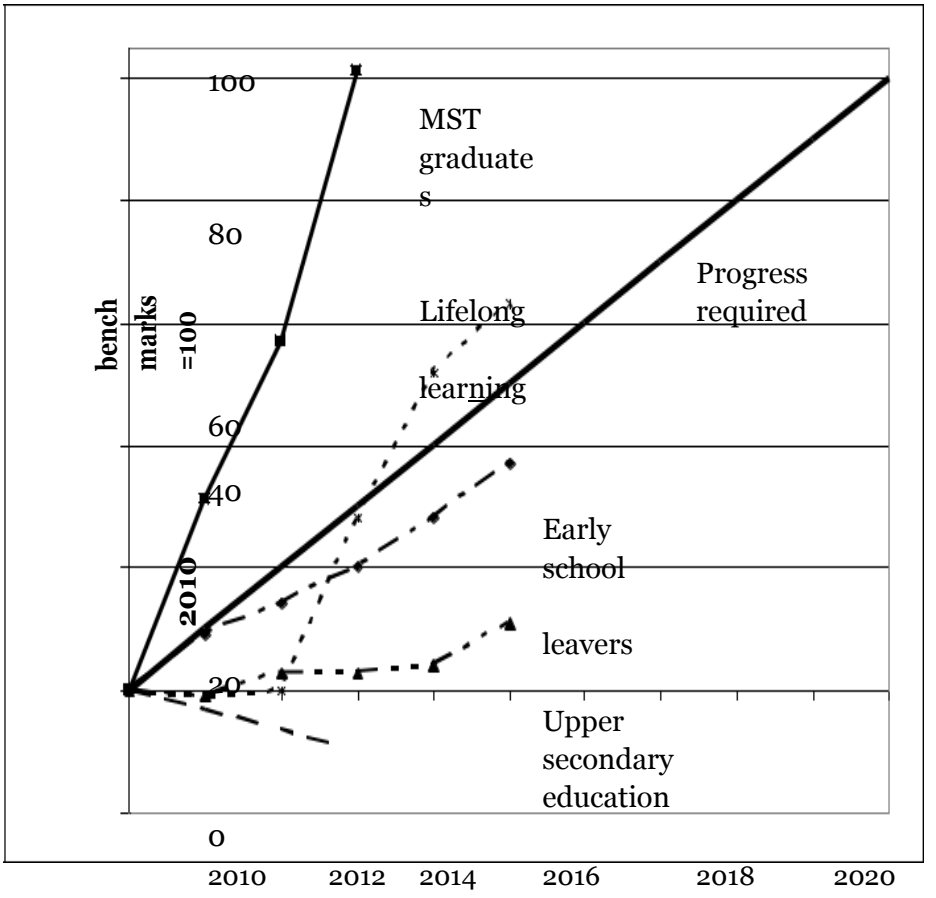

Fig. 1. Overview on average performance levels in the fields of the five European benchmarks (European Commission, Progress towards the Lisbon objectives in education and training, 2018).

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As we see from the figure 1, EU in two categories (MST graduates and Lifelong learning) meets its own goals, whereas, results of other categories do not confirm raised goals. Particularly much attention should be paid in reducing ratio of low-achieving 15-year-olds in reading literacy. The European Council in 2005 confirmed Lisbon objectives in higher level: to increase the economic growth of Europe by investing in knowledge, innovation and human capital and creating European Research Area (ERA). Research, education and innovation became three central and strongly interdependent drivers of the knowledge-based society. To realize ERA, research needs to develop strong links with education and innovation. Even more, economy and welfare of citizens rely on the progress of knowledge and its transformation in processes, new products and services. Investing in knowledge became the important way to foster economic growth and create new jobs in Europe. The European Commission proposed funding tools to help realise knowledge economy: the Structural and Cohesion funds, Education and Training programmes, new Research Framework programme. The European Commission document „Efficiency and equity in European education and training systems“ in 2006 emphasizes on European education and training systems as „critical factors to develop the EU‘s long term potential for competitiveness as well as for social cohesion“ (European Commission, Communication from the Commission to the Council and to the European Parliament, 2006). In the same document Higher education is presented as a key sector in the economy and in the knowledge-based society, which encompasses education, research and innovation ("knowledge triangle"). It is stated, what relationship between education and the world of work must be improved. It is influenced by the labour market needs

– increased demand for more highly qualified workers. Furthermore, other factors such as the ageing of the population or unemployment among young people also enter into play; for instance, the number of Europeans of at least 65 years of age will increase by 65 % by 2050, whereas the working population (15 to 64 years) will decrease by 20 % (European Commission, Communication from the Commission to the Council and to the European Parliament,2018).
(European Commission, Progress towards the Lisbon objectives in education and training. Indicators and benchmarks, 2018).

- at least 95% of children between 4 years old and the age for starting compulsory primary education should participate in early childhood education
- the share of early leavers from education and training should be less than 10%
- the share of low-achieving 15-years olds in reading, mathematics and science should be less than 15%
- the share of 30-34 year olds with tertiary educational attainment should be at least 40%
- an average of at least 15 % of adults should participate in lifelong learning.

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The European Commission declares the long-term strategic objectives of EU education and training policies:

- making lifelong learning and mobility a reality
- improving the quality and efficiency of education and training
- promoting equity, social cohesion and active citizenship
- enhancing creativity and innovation, including entrepreneurship, at all levels of education and training.

So, the importance of education for economic and social cohesion, competitiveness and economic growth is very clear defined in the European agenda (European Commission, Europe 2018, 2020).

3. The education policy in knowledge economy

Today Europe undergoes the changing economic paradigm. Future grow and social welfare will depend on knowledge-intensive industries and services. In this case more jobs will require a higher education qualification.
Universities have the potential to play an important role in the Lisbon objective and to give for Europe the skills and competences necessary for knowledge-based economy. It means that objectives of European education policy have been developed since Declaration, (2010) until Communique, Declaration declared aim of establishing a common European Higher Education Area by 2018. Bergen Communique confirmed the importance of rich heritage and cultural diversity in contributing to a knowledge-based society. It stressed on implication of higher education in the context of complex modern societies and the key factor to Europe's competitiveness. European education systems concluded that they are very important to develop European Union's competitiveness as well as social cohesion. With Lithuania's increasing integration into the world market, its relations with other foreign countries in education have expanded and become more intensive as well. It required provisions of the Law and the Government resolutions. As a result following changes took place:

- the three cycle system of higher education was introduced
- a system of credits for measuring the scope of study and promoting student exchange was introduced
- an external assessment system for the quality of studies was introduced

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- the content of education has been in principle updated – the system has become more flexible, students are offered more choice, more time is provided for the students' individual work
- the system of recognition of partial study abroad was confirmed by Minister of Education and Science of Lithuania in 2012-2018.

4. Lithuanian education system and economic context

GDP (Gross domestic product) increase or decrease best reflects trends of country economy development, when GDP increases, conditions for more resources allotment for education are established. Lithuania GDP in years 2018-2020 has increased from 111.9 milliard Lt to 113.7 milliard Lt (Table 1), taking in to account the influence of economic crisis, which influenced the decrease of GDP in the middle of the period.

Table 1. Main indicators of economic and social development in 2018-2022

	2018	2019	2020	2021	2022
Average annual population, thousand	3 357 675	3 339 009	3 291 960	3 025 027	2 987 523
Unemployment rate, %	5.8	13.7	17,8	15.4	13.4
Inflation, %	8.5	1.3	3.8	3.4	2.8
Gross domestic product at current prices, LTL mill.	111 920,1	92 032,4	95 676,0	106 893,4	113 734,7
Gross domestic product, per capita, at current prices, LTL	34 994,390	29 097,328	30 890,304	35 300,313	38 066,714

The five European benchmarks for 2018 are:

- Early school leavers
- Mathematics, science and technology (MST)
- Completion of upper secondary education
- Basic skills
- Lifelong learning

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EU goal is to reduce average of early school leavers to 10%, whereas, Lithuania aims to reduce it to 9%. Although Lithuania successfully comes up to the defined goals, the lag from the results of the countries joined EU in 2014, which are advanced in this category, is appreciable (see Table 2) (European Commission, Education and Training, Monitor1, 2018). Higher education is located at the crossroads of education, research and innovation, and mathematics, science and technology in particular are vital to the knowledge-based and increasingly digital economy. The issue of increasing recruitment to these studies, but particularly to technological fields, has been emphasised on numerous occasions (European Commission, Detailed analysis of progress towards the Lisbon objectives in education and training, 2018). EU goal is to increase number of MST graduates at least by 15% (in comparison with year 2014) and to reduce imbalance of sex in this field. In comparison with other EU states, in Lithuania both total number of students and MST graduates increases significantly, therefore further increase of MST graduates would raise problems of employment according to the speciality. Due to this reason common EU goal was changed to women rate in MST studies increase. It is pursued to increase number of female graduates per 1000 20-29-years old citizens to 13.5. This indicator in Lithuania increased from 10.6 in 2010 to 12.6 in 2018, and according to it Lithuania is at the second place in EU after Ireland.

Table 2. Comparison in five European benchmark areas

Benchmark area	Concrete EU target 2018	Concrete Lithuanian target 2020	Lithuania 2019	Three best performers in the EU. 2019	EU27 average, 2019
Share of early school leavers (18-24) in EU Upper-secondary completion rate in EU (20-24)		No more than 9%	7.9	Slovenia (4.2%), Czech Rep. (4.9%), Slovakia (5.0%)	13.5%
Adult participation in lifelong learning in EU (25-64)		At least 90%	87.7	Slovakia (93.3%), Czech Rep. (91.7%), Poland (90,1%)	79.5
		At least 15%	5.9%	Sweden (35.0%), Denmark (32.3%), Finland (23.8%)	8.90 %

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5. Conclusions

Education is recognized at the highest EU level as an area for co-operation between Member States. The policy of education is horizontal policy. It is close related with other EU policies: research and technological development, competitiveness, industrial, social and common European market development as well. European education policy directions are toughly related with EU strategic goals: economic growth, economic and social cohesion, knowledge-based economy and competitiveness. The development of knowledge society requires new attitude to European education policy finding and combining new ways of supplying knowledge in relation with other policies as well. General economic conditions in Lithuania are favourable for implementation of education policy priorities. Strategic goal of Lithuania National Education policy is to create effective and cohesive, based on rational use of resources and education quality education system.

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