

**T.C.
MARMARA ÜNİVERSİTESİ
AVRUPA BİRLİĞİ ENSTİTÜSÜ**

AVRUPA BİRLİĞİ İKTİSADI ANABİLİM DALI

**EUROPEAN UNION EDUCATION AND TRAINING OBJECTIVES
WITHIN THE LISBON STRATEGY: PERFORMANCE OF
TURKEY AND THE EUROPEAN UNION COUNTRIES**

YÜKSEK LİSANS TEZİ

SEDA SERTDEMİR

İstanbul – 2010

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Danışman: Doç.Dr. Sevgi İncei

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ONAY SAYFASI

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to my mother and grandmother...

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ABSTRACT

The main aim of this thesis is to analyze the performance and progress of European Union Countries and Turkey towards the Education and Training Objectives within the context of Lisbon Strategy. It also attempts to explore the social and economic benefits of education as well as the role of education in economic growth. Following research questions are intended to be answered: (1)What are the reported social and economic benefits of the education?, (2) Is there any documented relationship between education and economic growth?, (3)(a)What is the Lisbon Strategy, (b)What are its main objectives and pillars, (c)How does it progress?, (4) (a)What are the Education&Training Objectives of the Lisbon Strategy, (b)What are the benchmarks and indicators that are required in order to analyze the progress and make a comparison between countries towards these goals?, and (5) What are the compared results of countries' performance and progress according to Lisbon Education and Training benchmarks and indicators?"

This study is based on chronological document analysis. These documents mainly consist of data, surveys and publications of EU, OECD, and UNESCO. The document review indicated that new growth theories define the education, which is the main dimension of human capital, as an engine of the economic growth. Recent studies which measure the benefits of education demonstrated the importance of education more obviously. Accordingly, further education has economic benefits such as increase in earnings, productivity and high private and public returns as well as social benefits such as better private and public health, enhanced democratization, greater political stability, improved environment quality, the reduce of poverty and inequality, lower fertility rates, and lower crime rates .

European Union set a ten-year year strategic goal -The Lisbon Strategy- in 2000 to overcome the challenges of today's information era. "Education and Training" objectives have been essential for the development and success of this process. In the last section of this thesis, an international comparison was made by using the five benchmarks and sixteen indicators of education, that are set by European Council in order to guide and monitor the progress towards these objectives. The results demonstrated that there are significant variations among countries in the field of education. Nordic countries perform the best, while

EU's newcomers show significant shortfalls compared to EU averages. The performance of Turkey together with that of Romania and Bulgaria are in the lowest levels among European and OECD Countries according to almost all education and training indicators.

ÖZET

Bu tezin temel amacı Lizbon Strateji'sinin Eğitim ve Öğretim hedefleri doğrultusunda Avrupa Ülkeleri'nin ve Türkiye'nin performanslarını ve ilerlemelerini analiz etmektir. Eğitimin sosyal ve ekonomik faydalarının yanında ekonomik büyümedeki rolü de incelenmeye çalışılmıştır. Araştırma, aşağıdaki sorulara cevap aramıştır: (1) Eğitimin rapor edilmiş sosyal ve ekonomik faydaları nelerdir?, (2) Eğitim ile ekonomik büyüme arasında kanıtlanmış bir ilişki var mıdır?, (3) (a) Lizbon Stratejisi nedir, (b) Stratejinin başlıca amaçları ve bölümleri nelerdir, (c) Nasıl bir gidişata sahiptir?, (4) (a) Lizbon Strateji'sinin eğitim ve öğretim hedefleri nelerdir, (b) Bu hedefler doğrultusunda ülkelerin gelişmelerini takip etmek ve ülkeler arası karşılaştırma yapmak için gereken kriter ve göstergeler nelerdir?, ve (5) Lizbon Eğitim-Öğretim kriter ve göstergeleri doğrultusunda, ülkelerin karşılaştırmalı performans ve gelişimi nasıldır?

Bu tez doküman analizine dayanmaktadır. Avrupa Birliği, OECD ve UNESCO'nun veri, araştırma ve yayınları tezin ana dokümanlarını oluşturmaktadır. Bu kronolojik doküman analizi; yeni büyüme teorilerinin, insan sermayesinin en önemli boyutu olan eğitimi, ekonomik büyümenin motoru olarak tanımlanmadığını göstermiştir. Bununla beraber, eğitimin faydalarını ölçmeye dayanan yeni çalışmalar, eğitimin önemini çok daha açık olarak göstermektedir. Buna göre ileri eğitimin; gelir artışı, verimlilik artışı ve yüksek özel ve kamu geri dönüşleri gibi ekonomik faydalarının yanında daha iyi kişi ve kamu sağlığı, daha gelişmiş demokratikleşme, daha fazla politik istikrar, daha gelişmiş çevre kalitesi, daha az doğurganlık ve suç oranları, açlık ve eşitsizlikte azalma gibi sosyal faydaları da vardır.

Avrupa Birliği 2000 yılında, günümüz bilgi çağının engellerini aşmak için "Lizbon Stratejisi" adı verilen 10 yıllık bir stratejik plan ortaya koymuştur ve "Eğitim ve Öğretim" ayağı bu stratejinin gelişmesinde ve başarılı olmasında hayati bir öneme sahiptir. Tezin son bölümünde, Avrupa Konseyi tarafından sürece rehberlik etmek ve süreci izlemek amacıyla oluşturulmuş eğitim alanındaki beş kıstas ve on altı gösterge kullanılarak uluslararası bir karşılaştırma yapılmıştır. Araştırma sonuçları, eğitimde ülkeler arasında önemli farklılıklar olduğunu göstermiştir. İskandinav ülkeleri en iyi performansa sahip olurken; birliğe yeni katılan ülkelerin, AB ortalamalarıyla karşılaştırıldığında önemli eksiklikleri olduğu görülmektedir. Hemen hemen tüm eğitim göstergelerinde, Romanya ve Bulgaristan ile beraber Türkiye'nin performansı Avrupa ve OECD ülkeleri arasında en alt sıralardadır.

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LIST OF ABBREVIATIONS

CEPES	European Centre for Higher Education (UN organisation)
CIVED	Citizenship Education Survey (IEA study)
CRELL	Centre for Research on Lifelong Learning
EC	European Commission
ECE	Early Childhood Education
EDU	Participation in primary, secondary and tertiary education
EEA	European Economic Area (EU 27+Norway, Iceland and Liechtenstein)
EOS	Executive Opinion Survey
ETS	Education and Training Systems
EUROSTAT	European Statistics
EURYDICE	Education Information Network in the European Community
FYR	Former Yugoslav Republic (of Macedonia)
GDP	Gross Domestic Product
GNP	Gross National Product
ICT	Information and Communication Technologies
IEA	International Association for the Evaluation of Educational Achievement
INSEAD	A business school
IRR	Internal Rate of Return
ISCED	International Standard Classification of Education
LLL	Lifelong Learning
MST	Mathematics, Science and Technology
NPV	Net Present Value
OECD	Organisation for Economic Co-operation and Development
OMC	Open Method of Coordination
OMC	Open Method of Co-ordination
PIACC	Programme for the International Assessment of Adult Competencies (OECD study)
PISA	The Programme for International Student Assessment by OECD
R&D	Research and Development
SME	Small and Medium Size Enterprises

TALIS	Teaching and Learning International Survey (OECD study)
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UOE	UIS/OECD/Eurostat (common data collection)

COUNTRY ABBREVIATIONS

EU	European Union	AT	Austria
BE	Belgium	PL	Poland
BG	Bulgaria	PT	Portugal
CZ	Czech Republic	RO	Romania
DK	Denmark	SI	Slovenia
DE	Germany	SK	Slovakia
EE	Estonia	FI	Finland
EL	Greece	SE	Sweden
ES	Spain	UK	United Kingdom
FR	France	HR	Croatia
IE	Ireland	MK	FYR Macedonia
IT	Italy	TR	Turkey / Turkey
CY	Cyprus	EEA	European Economic Area
LV	Latvia	IS	Iceland
LT	Lithuania	LI	Liechtenstein
LU	Luxembourg	NO	Norway
HU	Hungary	JP	Japan
MT	Malta	US/USA	United States of America
NL	Netherlands		

INTRODUCTION

Globalization, rapid technological changes, changing social needs and values, changing work conditions, and hence changing demand for the qualifications and skills on the labour market have increased the role of education in the emerging information society. New theories of economic growth give pride of place to education. Studies show that labor productivity and earnings increase at each level of education and cost- benefit analyses demonstrate that higher education yields substantial private and public returns. Besides these direct economic benefits, education also has non market social outcomes that provide better private and public health, lower fertility rates, democratization, greater political stability, reduced level of poverty and inequality, improved environment quality, and lower crime rates.¹

To overcome the new challenges that the world faces, especially globalization and an aging population challenges; in 2000 European Union set up the “Lisbon Strategy”, which is a ten-year strategic goal in order to make European Union “*become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion*”.

Education, research and innovation are the valuable assets in order to be competitive in a changing and globalized world. Therefore, the subheading: “Education and Training” is essential to the development and success of Lisbon Strategy. Education and Training is not only important in establishing a new social model, but also crucial to the success of other economic objectives in the Lisbon Strategy. Education and Training Systems are key factors in increasing employability, creating equal opportunities, enhancing social inclusion and achieving the aim of sustainable development. Educated people who are more competitive are crucial to foster economy.

Although, European citizens are already the best educated and the European Education and Training Systems rank among the best in the world, for the aim of becoming

¹ Walter W. McMahon, **Externalities, Non-Market Effects, and Trends in Returns to Educational Investments**, OECD- The Appraisal of Investments in Educational Facilities, 2000, p.51-82

the most competitive and dynamic knowledge-based economy , EU set education and training objectives for ten years within the context of Lisbon Strategy. Increasing the quality and effectiveness of education and training systems in the EU, facilitating the access of all to the education and training systems, opening up education and training systems to the wider world are the core educational objectives of EU for ten years. The European Council adopted five benchmarks to be achieved by 2010 in order to guide the progress and defined sixteen core indicators in order to monitor the progress towards the Lisbon objectives in EU and national levels.

1.1 Purpose of the Study

This thesis is intended to analyze the performance and progress of European Union countries and Turkey, make an international comparison among EU, third countries and Turkey in the field of Education and Training according to the specific benchmarks and indicators that set in the context of Lisbon Strategy. It also includes a brief examination of economic and social benefits of education as well as the relation between education and economic growth in the literature.

1.2 Questions of the Study

1. What are the reported social and economic benefits of the education?
2. Is there any documented relationship between education and economic growth?
3. (a) What is Lisbon Strategy, (b) What are its main objectives, pillars, (c) How does it progress?
4. (a) What are the Education-Training Objectives of Lisbon Strategy

(b) What are the benchmarks and indicators that are required in order to analyze the progress and make a comparison between countries towards these goals?
5. What are the compared results of countries' performance and progress according to Lisbon Education and Training benchmarks and indicators?

1.3 Significance of the Study

This study will review literature in order to sum up economic and social benefits of education as well as analyse the effects of education on economic growth. Therefore, it attempts to show the importance of education in both social and economical terms. After identifying the benchmarks and indicators to analyze the progress of countries in the field of education and training towards Lisbon goals, a comparison will be made among EU, candidate and third countries like USA and Japan. Thus, the result of this study may provide information especially to education policy makers in order to see their countries' strength and weaknesses in the field of education and training towards Lisbon goals. Finally, since this study will analyse the education and training in a broad frame through different indicators, it may contribute to further researches in this area.

1.4 Limitations of the Study

This study includes qualitative data analysis. As the nature of qualitative data analyses displays, the result of document analyses could be based on personal interpretation as its in this case as well. In this study, five benchmarks and sixteen indicators of Lisbon Strategy were analyzed in order to measure the progress of countries in education and training area. The results of this study did not cover all the aspects of education while making a comparison among countries because of the indicators which are not used in this research. Moreover, data and researches are limited to a certain number of indicator areas like the 'Civic Skills', which prevents the researcher from reaching at conclusions in these areas. Finally, different definitions of countries in several indicator areas like in the case of "Special Needs Education" and the different collection of data sometimes made comparing countries difficult.

1.5 Organization of the Study

This thesis is organized in the following design:

There are five sections in this thesis. These sections are: (1) Introduction, (2) Review of the related literature, (3) Method, (4) Results, and (5) General discussion of the results and the conclusion.

Review of the related literature section is composed of four chapters. The first chapter is devoted to the documented economic and social benefits of education as well as the relation between education and economic growth. It starts with a brief examination of new growth theories and the role of education in these theories. It also includes the empirical studies in the field. The chapter will continue with economic benefits of education by means of education and earnings relation and economic returns to education calculations (Internal Rates of Return and Net Present Value Approaches) which are cost-benefit analyses. An international comparison will be made between countries according to the world data, mostly depending on OECD calculations. At the final part, the indirect benefits, namely the social benefits of education for individuals and society will be examined.

Chapter 2 is a glance of the Lisbon Strategy and Education & Training Objectives within the Strategy. First section is started with Lisbon Strategy, a ten-year strategic goal of European Union launched in 2000. It includes the framework of Lisbon Strategy, summary of the main pillars and specific targets, the new start of Lisbon Strategy in 2005 and the examination of countries' relative performances in meeting the Lisbon goals while approaching to the deadline. The second section is devoted to Education and Training Objectives of Lisbon Process, which includes explanations of the targets and objectives in detail as well as 5 benchmarks and 16 indicators that are defined by European Council in order to monitor progress towards the Lisbon objectives.

Chapter 3 and 4 are detailed analyses of each education benchmark and indicator together with EU, OECD, third countries and especially Turkey's performance towards these benchmarks and indicators as well as international comparison between countries.

The last part is the general discussion of the results and conclusion section, in which the main findings of the thesis are summarized and the concluding remarks are made.

REVIEW OF THE RELATED LITERATURE

2.1 ECONOMIC AND SOCIAL BENEFITS OF EDUCATION AND EFFECTS OF EDUCATION ON ECONOMIC GROWTH

2.1.1 Education And Economic Growth

“Why are some countries so rich, why are some so poor?” This question has preoccupied economists for centuries.² There is enormous diversity of income per capita around the world. The income distribution of richest countries is more than 30 times that of the poorest countries. These cross-country income differences are critical because high income levels mean high standards of living, high quality of life, and high quality of health. The answer of why some countries are richer than the others lies in the differences in growth rates³ which are mostly measured by the changes in Gross Domestic Product (GDP) (per capita or output per worker). In other words, it is the change of productive power of nations. Production relies on production factors, which are land (natural resources), labor, and capital stock in classical economy. A fourth factor has recently been added to these production factors, namely “human capital”. It is the skill and knowledge gained by a worker through education and experience.

The modern examination of growth rate dates to 1950s with two papers written by Robert Solow⁴ who put the technological progress as the ultimate driving force behind sustained economic growth.(Neo-classical Growth Theory)⁵ Until the 1980s, theories about economic growth dealt with the quantity part of growth. Human capital has been demonstrated as a critical factor in new theories of growth, initiated by Lucas (1988).⁶ New growth theory, namely “Endogenous Growth Theory”, added the human capital factor to the literature of growth. Physical capital and natural resources are the passive factors of

² Charles I. Jones, **Introduction to Economic Growth**, Second Edition, W.W.Norton&Company, Inc., 2002, p.1-19

³ Daron Acemoglu, **Introduction to Modern Economic Growth**, Princeton University Press, 2009, p.3-11

⁴ Robert M. Solow, **Technical Change and the Aggregate Production Function**, Review of Economics and Statistics, 1957

⁵ Jones, p.1-19

⁶ Robert E. Lucas, **On the Mechanics of Economic Growth**, Journal of Monetary Economics-22, 1988;

Daniel Cohen and Marcelo Soto, **Growth and Human Capital: Good Data, Good Results**, OECD Development Centre, Technical Papers, September 2001

production while human is the active factor that contributes to national development directly by stimulating physical capital and exploring natural resources.⁷

Therefore, investment in human as a main source of human capital is essential to generate economic growth. Human capital has three dimensions: education, health, and nutrition. However, the main source of human capital is education.⁸ That is the reason why new theories of growth give education (knowledge, as a broad term) a central role and accept education as an essential engine of economic growth.⁹ Educated people direct their knowledge to their job (to production unit that they are working for). They easily adapt themselves to new working conditions and new technologies. In addition, exchange of information is very strong among educated people.¹⁰ Furthermore, “*education stimulates economic growth and improves people’s lives through many channels: by increasing the efficiency of the labor force, by fostering democracy and thus creating better conditions for good governance, by improving health, by enhancing, and so on*”.¹¹

The positive effect of educational development on economic growth has been revealed in many studies till today. However, the drawback in the studies in this area is that there is not a clear cut definition of human capital. The fact that different variables are used in order to measure human capital in the studies leads to getting different results.

In 1960s Schultz (1961) and Denison (1962) demonstrated the direct contribution of education in national income increase. Denison (1979) demonstrated that one fifth of GDP per worker growth between the years 1948-1973 in the US relied on growth in education indicators. In a same manner, Jorgenson and Fraumeni (1993) showed that the improvement in education units were responsible for one fourth of economic growth between the years 1948-1986 in US. D. Asteriou and G.M. Agiomirgianakis investigated the 1960-1994 data in Greece and took the GDP per capita as a growth indicator and primary, secondary as well as tertiary schooling rates as education indicators. According to their study, there is a long-run

⁷ Muharrem Afsar, **Türkiye’de Eğitim Yatırımları ve Ekonomik Büyüme İlişkisi**, Anadolu Üniversitesi Sosyal Bilimler Dergisi, Cilt:9-Sayı:1: 85-89, 2009

⁸ Afsar, p.86

⁹ Marielle Montelis, **The Analysis of the Relation between Education and Economic Growth**, Groupe Sup de Co Montpellier, Compare, Volume 34, No.1, March 2004

¹⁰ Fatih Türkmen, **Eğitimin Ekonomik ve Sosyal Faydaları ve Türkiye’de Eğitim Ekonomik Büyüme İlişkisinin Araştırılması**, DPT- Uzmanlık Tezleri, Yayın No: DPT:2625, August 2002

¹¹ Thorvaldur Gylfason, **Natural Resources, Education, and Economic Development**, For the 15th Annual Congress of the European Economic Association, Bolzano, 30/08-02/09 2000, European Economic Review, 2001, p.3

relationship between schooling rate in all levels and economic growth. (in Türkmen, DPT Uzmanlık Tezi, p. 69)

Thorvaldur Gylfason (2001) investigated the data between 1980-1997 and tried to explain the relationship among natural resources, education and economic development. This study found out that (1) economic growth varies inversely with natural resource abundance, (2) different measures of education intended to reflect education inputs, outcomes, and participation are all inversely related to natural resource abundance. The results demonstrated that an increase in the natural capital share is associated with a decrease in public expenditure on education, decrease by year of the schooling and decrease in the secondary-school enrolment rate and (3) economic growth varies directly with education. The results also indicated that 40 percentage point increase in secondary-school enrolment goes along with a one percentage point rise in the annual rate of growth of GNP per capita .Moreover, public expenditure on education and expected years of schooling are also positively correlated with economic growth across countries. ¹²

Cohen and Soto (2002) made a comprehensive study about the human capital-growth relation that covers 95 countries including OECD countries. By using OECD database, surveys and statistics of UNESCO and information by National Statistical Agencies, the researchers presented a new data set for the years of schooling across countries for the 1960–2000 period. Cohen and Soto took years of schooling as a human capital indicator in their study. Their study showed that education has a positive and significant long-term effect on the growth of income per capita and one extra year of schooling results in 12% increase in income.

In the work of Psacharopoulos and Patrinos in 2002¹³ , which covers the estimates of the returns to education for 98 countries, the average rate of return to another year of schooling is 10 %. The highest returns are recorded for low and middle-income countries and the lower returns are observed in the high-income countries of the OECD. Additionally, women receive higher returns to their schooling investments in general.

¹² Thorvaldur Gylfason, p.4

¹³ G. Psacharopoulos and H.A. Patrinos, **Return to Investment in Education**, World Bank Policy Research Working Paper, 2881, September 2002

Keller (2006)¹⁴ analyzed the effects of primary, secondary, and higher education on per capita growth by using different measures of education: enrollment rates, public expenditure- and expenditures per student as a share of GDP. The researcher used worldwide panels between 1960-2000 time period and examined developing and developed countries' subsamples. The author summarized that secondary enrollment rates appear the most vital impact on per capita growth. College enrollment rates significantly affect per capita growth while primary enrollment rates do not signal direct benefits on per capita growth. According to the study, the public expenditures per student and enrollment models explain 69 percent of GDP per capita growth globally. The author added to her conclusion that education indirectly affects other development goals. Primary and secondary enrollment rates and expenditures per primary school pupil result in lower fertility rates. Likewise, college enrollment rates and expenditures are important to political rights, which are channelled eventually to per capita growth.

There are also studies in Turkey about the education-economic growth relationship. In 1971, N.Comlekci found a significant relation between income per capita and education investments referring the 1948-1965 data.¹⁵ Fatih Turkmen(2002) tried to analyze the human capital effect on economic growth between the years 1980-1999 and used almost all variables such as laborforce education level, education expenditures, education investments and schooling rates that are used to measure human capital. According to his study, the changes in education level of laborforce explain 31% and the educational investments explain 23% of economic growth in Turkey between the years 1980-1999. In addition, there is no significant relation between schooling rate and economic growth as well as no significant contribution of education expenditures on economic growth in Turkey between the mentioned years.

Dogan and Bozkurt (2002)¹⁶ demonstrated in their study that there is a long-run relationship between upper secondary (high school) and higher education schooling rate and income per capita according to 1983-2001 data. Coban (2004) explained that increase in

¹⁴ K.R.I. Keller, **Investment in Primary, Secondary and Higher Education and The Effects on Economic Growth**, Contemporary Economic Policy, Vol.24, No.1, January 2006

¹⁵ Necla Çömlekçi. **„Türkiye'nin İktisadi Kalkınmasında Eğitimin Rolü**, Eskişehir İktisadi Ticari İlimler Akademisi Yayınları No: 85/45, Ankara, Sevinç Matbaası, 1971

¹⁶ Seyhan Doğan and Hilal Bozkurt. **Eğitim-İktisadi Büyüme İlişkisi ve Türkiye İçin Kointegrasyon Analizi**, 2002

primary schooling rate results in economic growth and economic growth results increase in upper secondary schooling rate according to 1980-1997 data.

Muharrem Afsar (2009) analyzed the 1963-2005 data in Turkey and tried to explain the relation between education investments and economic growth. According to his study, there is one way causality relationship between education investments and economic growth. Educational investments have positive effect on economic growth but education growth has no effect on educational investments. (There is no two-way causality relationship)

2.1.2 Economic Benefits Of Education

2.1.2.1 Education and Earnings

Higher earnings of people with higher levels of education are strong incentive and a key measure for individuals to invest in further education. The costs of the education must be balanced with these high earnings.

Education at a Glance, which is published by OECD every year has an indicator¹⁷ that examines the relative earnings of workers with different levels of educational attainment in 25 OECD countries and in three partner countries. Overall results demonstrated that earnings increase with each level of education. The advantage of the educational earnings increases with age, but in general females earn less than males with similar levels of educational attainment. The report also suggests that the variations among countries in earnings can be caused by many reasons including the demand for skills in the labour market, minimum wage legislation, the strength of unions, the coverage of collective bargaining agreements, the supply of workers at various levels of educational attainment, and the effects of part-time and seasonal work. Data on earnings are calculated before income tax except in Belgium, Korea and Turkey (net of income tax).

The indicator compares the average annual earnings of tertiary graduates to the average annual earnings of upper secondary or post-secondary non-tertiary graduates in order

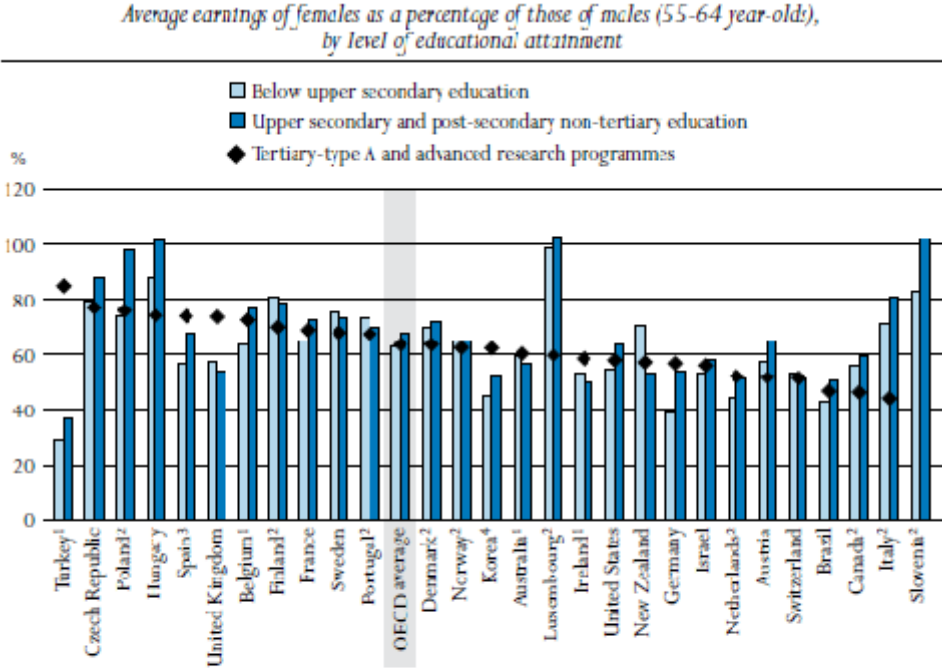
¹⁷ OECD- Education at a Glance 2009, Indicator A7, p. 136-149

to measure the earnings benefits of completing tertiary education. The results demonstrated that in all countries graduates of tertiary education earn more overall than upper secondary and post-secondary non-tertiary graduates. Moreover, the relative earnings premium of individuals with tertiary education has been rising in most countries over the past ten years.

Both males and females with more than upper secondary attainment have substantial earnings advantages. However, females earn less than males with similar educational attainment levels in all countries with few exceptions. Females between 30-44 age group earn less than their male counterparts in all levels of educational attainment in all countries. However, it is stressed in the OECD Report that part time work earnings are included in the most countries data which constitutes an important source for female employment. Thus, it may be the reason of relative less earnings of female than men. When part-time work and part-year earnings are excluded from the calculations, earnings of females between the ages of 30-44 reach 82% of earnings of males in Hungary, 85% in Luxemburg and 78% in Poland. Earnings gap between males and females are more pronounced for the oldest ages but it has narrowed in some countries recently.

Figure 1 shows the average earnings of females as a percentage of those of males between 55-64 years-old. The gap between male and female earnings is wide in most of the countries in those ages. In Hungary, Luxembourg, Poland, and Slovenia females with an upper secondary and postsecondary non-tertiary education have similar earnings with their male counterparts. Females in Turkey with upper secondary or below education are the most disadvantaged group regarding the earnings when compared to their male counterparts. However, inversely females with tertiary education are advantageous among 28 countries in terms of earnings that reach more than 80% of the tertiary educated males earnings.

Figure 1: Differences in earnings between females and males (2007 or latest available year)

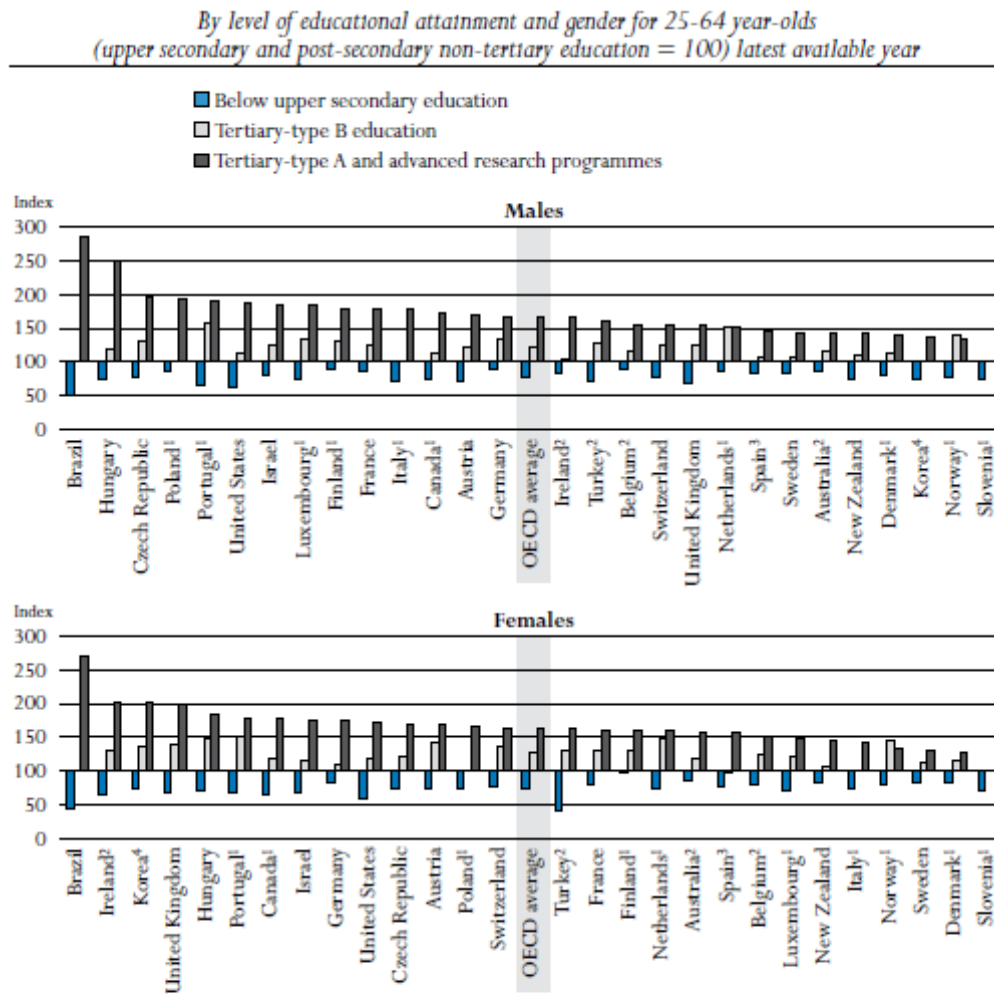


1. Year of reference: 2005.
 2. Year of reference: 2006.
 3. Year of reference: 2004.
 4. Year of reference: 2003.
 Note: Data on earnings for individuals in part-time work are excluded for the Czech Republic, Hungary, Luxembourg, Poland, Portugal and Slovenia while data on part year earnings are excluded for Hungary, Luxembourg, Portugal and Slovenia.

Source: OECD-Education at a Glance 2009, Table A7.1b, P. 142
 (see for additional notes: www.oecd.org/edu/eag2009)

Figure 2 shows that tertiary educated males have crucial earnings premium as regards to upper secondary education especially in Brazil and Hungary, which is the case for tertiary educated females in Brazil, Ireland, Korea and United Kingdom. On the other hand, males below secondary education are disadvantaged in Brazil, United States, United Kingdom and Portugal, and females with below secondary education are in the similar situation in Turkey, Brazil and United States.

Figure 2: Relative earnings from employment (2007 or latest available year)



1. Year of reference 2006.

2. Year of reference 2005.

3. Year of reference 2004.

4. Year of reference 2003.

Countries are ranked in descending order of the relative earnings of the population with a tertiary-type A (including advanced research programmes) level of educational attainment.

Source: OECD-Education at a Glance 2009, Table A7.1

(see for additional notes: www.oecd.org/edu/eag2009)

Education is important for employment at an older age. Both employment opportunities and the educational earnings advantage increases at an older age for individuals with tertiary education in most countries. With the exception of Australia, Italy, New Zealand, Turkey, the United Kingdom and Israel, tertiary earnings are relatively higher for older individuals in all countries.

2.1.2.2. Economic Returns to Education

An individual incur costs while investing in education like tuition fees or foregone earnings during school education. If these costs of attaining higher level education translate into higher earnings, then it creates incentives for individuals to invest time and money in education. In a same manner, the public sector have costs for education like direct expenditures such as payments of teachers' salaries or the construction of school buildings, etc. or public-private transfers such as public subsidies for scholarships and other grants, etc. as well as having benefits like increased revenue from income taxes on higher wages and social insurance payments and lower social transfers due to the higher income.

Another indicator(Indicator A8, 2009), in Education at a Glance, published by OECD, measures the economic returns to education in order to examine the incentives to be invested in education across 21 OECD countries. It analyzes the financial returns both to individual and to public, looking at the returns from the perspective of males and females at different educational levels.

Net Present Value (NPV) of the total investment approach is used in this indicator in order to measure the economic value of educational investment in which costs and benefits in different periods(cash flows) are transferred back (discounted) to the beginning of the investment by using a required rate of interest (discount rate). The discount rate is taken 5%, which is the interest rate expected to be obtained by investing in long-term government bonds in most OECD countries under normal circumstances. A negative NPV suggests that one would be better off enrolling in education rather than investing in bonds that is opposite for negative NPV.

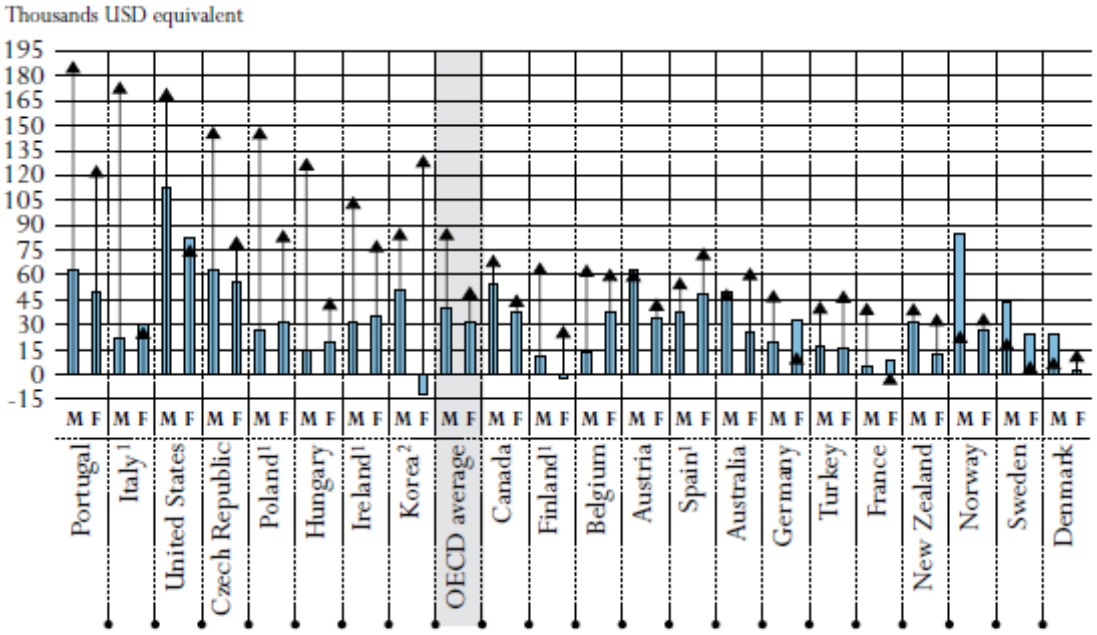
The overall results demonstrate that in most countries, both private and public returns for investing in a tertiary education are higher than the returns for upper secondary or post-secondary non- tertiary education. On average, tertiary education generates a NPV nearly twice that of upper secondary or post-secondary non tertiary education across OECD countries. The financial rewards of investing in tertiary education are lower for females than males in most countries except Turkey, Spain, Norway, Korea, Denmark and Australia where

returns are higher for females. Generally, in upper secondary or post-secondary non-tertiary education, males have better financial returns than females.

Figure 3 shows the Net Present Value of investments in education discounted at a 5% interest rate. On average, males and females with upper secondary or post-secondary non-tertiary education expect to earn USD 40 000 and USD 28 000 respectively over their working life while males and females that invest in tertiary education expect to earn USD 82 000 and USD 52 000 respectively.¹⁸ (See Annex I) Over their working life, male students in Portugal, Italy and the United States investing in tertiary education can expect to gain more than USD 150 000, while tertiary educated females expect more than USD 100 000 in Korea and Portugal.

Figure 3: Economic returns for an individual obtaining upper secondary or post-secondary non-tertiary education and tertiary education

■ Private net present value of investing in upper secondary or post-secondary non-tertiary education
▲ Private net present value of investing in tertiary education



M: Male; F: Female
1. Year of reference 2004.
2. Year of reference 2003.
Countries are ranked by descending order of the net present value for males immediately acquiring a tertiary level of education. Cash flows are discounted by 5% interest rate.

Source: OECD, Education at a Glance 2009, Table A8.1 and Table A8.2

¹⁸ OECD, Education at a Glance 2009, Table A8.1 and A8.3, p. 165 - 168

Table 1 shows the countries that have the highest and the lowest Net Present Values of investments in different levels of education. Countries significantly vary in terms of financial returns to education. In upper secondary or post-secondary non-tertiary education level private returns vary from USD 112 929 in United States to USD 5 284 in France for a male while they vary from 81 889 (United States) to (-) USD 12 011 (Korea) for a female. Public returns in this level are much lower than private returns and Korea, France and Italy experience the negative values.

In tertiary level education, generally public sector covers the direct cost of education except in Australia, Canada, Korea and the United States, where high tuition fees are covered by individuals. Private investment costs of tertiary education exceed those of governments in most countries. There is also a strong dispersion of returns in the level of tertiary education. A male investing in tertiary education expect to gain over USD 140 000 over his working life in Portugal, United States, Czech Republic and Italy while this level decreases to USD 20 000 levels in Denmark, Sweden and Norway. Korea experiences the higher private return to investment for female which is approximately USD 130 000 whereas France has a negative return, as it is (-) USD 1 908. A significant result from the table is that in the tertiary education especially for females, Nordic Countries experience low and negative returns to education which lowers the incentive to invest in further education.

Table 1: The first and last 3 countries according to Net Present Values of Educational Investment

		MALES			FEMALES		
Private NPV to obtain upper secondary or post-secondary non-tertiary education	First 3 Countries with the highest NPV	United States (112 929)	Norway (84 606)	Czech Rep. (62 570)	United States (81 889)	Czech Rep. (55 584)	Portugal (50 158)
	Last 3 Countries with the lowest NPV	France (5 284)	Belgium (13 659)	Turkey (16 308)	Korea (-12 011)	Finland (-2 020)	Denmark (2 828)
Private NPV to obtain tertiary education	First 3 Countries with the highest NPV	Portugal (186 307)	Italy (173 889)	United States (169 945)	Korea (129 337)	Portugal (123 357)	Poland (84 260)
	Last 3 Countries with the lowest NPV	Denmark (7 342)	Sweden (18 802)	Norway (23 306)	France (-1 908)	Sweden (5 097)	Denmark (11 983)
Public NPV to obtain upper secondary or post-secondary non-tertiary education	First 3 Countries with the highest NPV	Denmark (35 524)	United States (32 257)	Austria (30 613)	Germany (42 176)	Sweden (24 685)	New Zealand (24 102)
	Last 3 Countries with the lowest NPV	Korea (-4 272)	France (-271)	Turkey (2 109)	Korea (-7 516)	Italy (-1 637)	Turkey (722)
Public NPV to obtain tertiary education	First 3 Countries with the highest NPV	Czech Rep. (160 834)	United States (100 119)	Belgium (96 186)	Belgium (81 858)	Portugal (66 975)	Hungary (63 921)
	Last 3 Countries with the lowest NPV	Turkey (10 346)	Denmark (14 206)	Sweden (17 197)	Denmark (-22 702)	Sweden (-10 923)	Norway (-1 116)

Source: OECD, Education at a Glance 2009, Table A8.1, A8.2, A8.3 and A8.4

Public returns to education demonstrate the effect of policies on educational investments and high returns stimulate governments to invest in education. On average, public returns for upper secondary or post-secondary non-tertiary education are USD 14 000 for a male that is lower for a female as its USD 10 000. In terms of tertiary education, public returns are significantly higher than those for upper secondary or post secondary non tertiary education since a larger share of investment cost of tertiary education is covered by the individual. On average, the tertiary education generates USD 52 000 net public return for a male and USD 27 000 for a female. The public returns are expected to be more than USD 90 000 over an individual's working life in Czech Republic, United States, Belgium and Hungary ,so higher public returns provide a strong incentive for governments to invest in and expand higher education.

Increasing the educational level of society has lots of indirect benefits besides revenue growth through high income taxes and high social insurance to governments. For example, better educated people have better health, which lowers the health care expenditures. This topic will be examined in the following section.

Private and public returns in all level of education are below the OECD average in Turkey. On the other hand, females in Turkey get almost the same returns on their investment in education with males in the same level of education, which is opposite in most OECD countries. Even a female investing in tertiary education can expect to gain USD 48 000 over her working life, which is more than their male counterparts. (See Table 2) It is important to add that comparing the result of such return calculations has restrictions, so the international comparison should be made in caution.

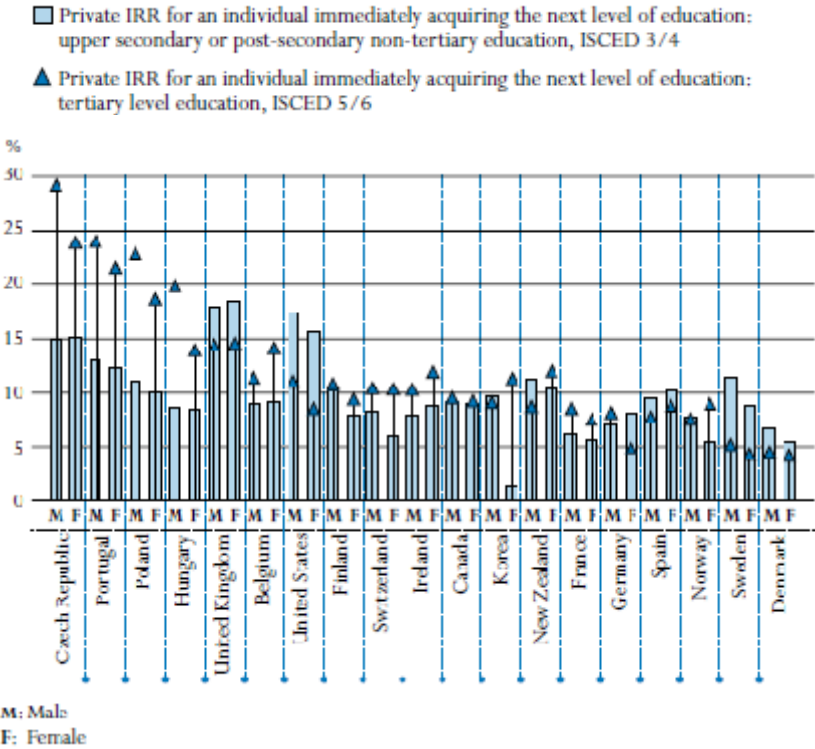
Table 2: Private and Public Returns to Education in Turkey and OECD Average (in USD)

	Turkey		OECD Average	
	Male	Female	Male	Female
Private NPV for an individual obtaining upper secondary or post-secondary non-tertiary education ISCED 3/4 (2005)	16 308	15 126	39 840	28 223
Private NPV for an individual obtaining tertiary education ISCED 5/6 (2005)	41 090	47 695	82 007	51 986
Public NPV for an individual obtaining upper secondary or post-secondary non-tertiary education(2005)	2 109	722	14 056	10 566
Public NPV for an individual obtaining tertiary education(2005)	10 346	12 355	51 954	27 280

Source: OECD, Education at a Glance 2009, Table A8.1 , A8.2, A8.3 and A8.4

“Internal rate of return” (IRR) is also a common measurement that is used in the calculations of returns to educational investments besides Net Present Value Approach. It is basically an interest rate that an individual can expect to receive on an educational investment. In the calculations, this interest rate is raised to the level at which the economic benefits equal to the cost of the investment. IRR has also used in the previous editions of “Education at a Glance” as a measure for economic returns to education. The results in 2008 are similar to the 2009 Edition and they show that in most countries, the rate of return to tertiary education is higher than for upper secondary or post-secondary non-tertiary education and there are significant variations between countries. In upper secondary or post-secondary non-tertiary education, returns are marginally lower for females and vary between 6.1% and 18% for males and 5.6% and 18.5% for females. United Kingdom, United States and Czech Republic have the highest returns at this level of education both for females and males. On average across 19 countries, a tertiary education yields a 12 and 11% return for males and females respectively and it is more than 20%, even close to 30% in Czech Republic, Portugal and Poland. These rates are at the lowest levels in Germany, Norway, Spain, and Sweden among the investigated countries. (See Figure 4)

Figure 4: Private internal rates of return (IRR) for an individual obtaining upper secondary or post-secondary non-tertiary education, and university-level degree



Source: OECD, Education at a Glance Tables A10.1 and A10.2., p.182

Turkmen(2002) calculated the returns to educational investments in Turkey for the years of 1987 and 1994 on the basis of “Household Income Survey” publications of “State Planning Organization”, and the data in “National Observatory Country Report” and “Feasibility Study in Middle Degree Vocational Education: Evaluation of Unit Costs and Capacity” works. The results demonstrated that the returns to higher educational investments are substantially higher than the returns of other levels of education which is a strong incentive for the individuals to invest in higher education in Turkey. In addition, the returns to high school (upper secondary education) investments had more than doubled between the years 1987 and 1994. Although vocational education as an upper secondary level returns were more than the high school returns in 1987, it decreased between these years and now has a return which is less than that of high school level. (See Table 3) The author added that a restructuring is needed for upper secondary vocational education through collaboration between school-business life such as developing curriculum in accordance with business

needs, implementation of more broad programs ,establishment of vocational standards and education of more sufficient teachers in a competitive environment. ¹⁹

Table 3: Private Returns to Education in Turkey

Years	1987	1994
Middle School	8	8,6
High School	8,7	18,9
Vocational High school	8,8	8,1
Tertiary Education	27,6	26,5

Source: Turkmen, Fatih (2002), DPT Uzmanlık Tezi, p.43

Another study that measures the return to investment in education was made by Psacharopoulos and Patrinos²⁰ that updated 2004 and covered 98 countries. They concluded that the private returns are higher than social returns, which may be caused by the fact that social return estimates do not include social benefits and because of the public subsidization of education. Low income and middle income countries has recorded the higher returns, whereas high-income countries have lower returns to education. Latin America, the Caribbean region and Sub-Saharan Africa region recorded the highest returns as well as Asia’s records at about the world average. The lowest returns to schooling belong to the non-OECD European, Middle East and North African group of countries. The average rate of return to another year of schooling is 10%. Moreover, women receive higher returns to their schooling investments. While the returns to primary education are higher for men; in terms of secondary education they are higher for women. Differently from the OECD “Education at a Glance” publication, private returns to schooling are higher in the primary education than the higher education. In the case of public returns, both primary and secondary education investments are more than that of higher education.

It is important to add that comparing the rate of returns from different studies has restrictions and not advisable because returns may vary between and even within a class of models due to different control variables. For example, different calculated cash flows cause

¹⁹ Turkmen, p.44

²⁰ George Psacharopoulos and Harry A.Patrinos, **Return to Investment in Education, Further Update**, Education Economics, Vol. 12, No. 2, August 2004, p.1-4

variations in returns.²¹ Data sample coverage and methodology are the main sources of non-comparability.²²

2.1.3 Social Benefits Of Education

The mostly measured and recognized benefits of education are economic ones like higher income for individuals, higher payments for public through higher income taxes and social insurance payments. Recent studies also reveal major benefits on economic growth. However, the educational benefits are more than the enhancement of the labor productivity and earnings.²³ Beyond the direct effects of education, there are indirect effects: “social benefits” for individuals and society at all, which are likely to be larger than the direct impacts. For example, along with higher income; more educated individuals tend to have better health which lowers public expenditure of health care, have more life expectancy and better outcomes for their children, as well as an improved quality of life in general. In brief, both individuals and society gain through increasing the education level of individuals.

The measurement of these social benefits is difficult and these indirect effects of education are not included in rate-of-return calculations. Basic problems with the estimation of social benefit of education emerge from the fact that capturing external effects is difficult and the available data primarily are non-experimental or behavioral.²⁴ However, analyzing these benefits helps us to understand the full effects of education and provides the authorities with improved information which is crucial to set policies related to education.

McMahon²⁵ tried to analyze the non-market and externality benefits of education by using a data covering 78 countries including OECD countries. Major net outcomes of education, which are increase in earnings, better private and public health, lower fertility rates, enhanced democratization, greater political stability, decline of poverty and inequality, improved environment quality, and lower crime rates have been identified in the study.

²¹ OECD, Education at a Glance 2009, Indicator A8, p. 159

²² Psacharopoulos and Patrinos, 2004, p.114

²³ Jere R. Behrman, and Nevzer Stacey, **The Social Benefits of Education**, The University of Michigan, 1997, p. 1-9

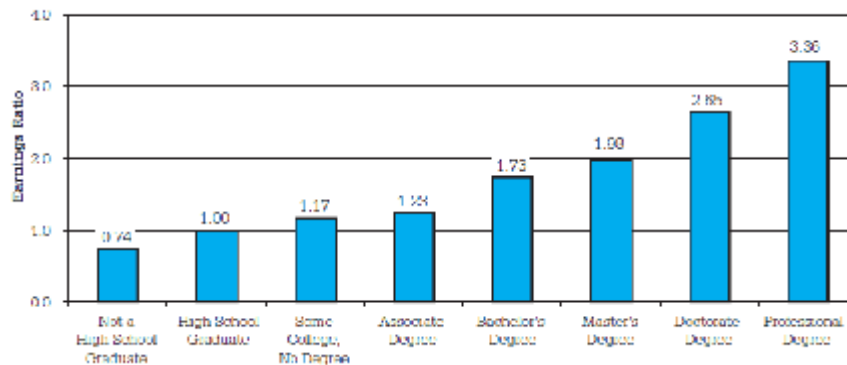
²⁴ Behrman and Stacey, p.247-252

²⁵ Walter , 2000, p.51-82

2.1.3.1 Increase in earnings

The major effect of education to individuals is increment in income levels. Higher earnings are not only a private benefit but also a social benefit as the higher earnings of educated workers generate higher tax payments to local and state levels. A study for US society demonstrated that average lifetime earnings of higher educated individuals are higher than one degree less educated individuals. (See Figure 5) A detailed examination of education effect on earnings can be found in the previous section in this thesis.

Figure 5: Expected Lifetime Earnings Relative to High School Graduates, by Education Level



Source: Education Pays 2004²⁶, pp.11

NOTES :

- The height of each bar in this graph represents the ratio of average lifetime earnings at the specific education level to average lifetime earnings of high school graduates.
- Based on sum of mean annual 2003 earnings from ages 25 to 64. Future earnings are discounted using a 5 percent annual rate.

2.1.3.2 Better private and public health

There are considerable international evidences about education's strong link to health. Actually, education has the potential to change the health beliefs and behaviors, it helps to promote and sustain healthy lifestyles and positive choices; as a result of the impacts of these attitudes, education affects health.

People with better education, spend on better healthcare and better nutrition, they tend to have better health and well-being and healthier behaviors. The international studies

²⁶ S. Baum and K. Payea, **Education Pays 2004: The Benefits of Higher Education for Individuals and Society**, College Board- Trends in Higher Education Series, Revised Edition 2005

showed that raising educational level lowers child mortality, increase life expectancy as well as more specifically for women it decreases the probability of smoking during pregnancy and decrease the adult depression.²⁷ In 2000, while 14% of college graduates smoke, this level is 25% for high school graduates in US. In addition when information about the risks of smoking became public, smoking rates declined more rapidly among college graduates than among others.²⁸ Increasing the schooling of parents, especially of mothers leads to improved health among infants and children. For instance, through more educated parents; a lower rate of infant mortality and higher rate of vaccinations among children have been accomplished.

Educated people try to choose safer occupations which results in lower occupational hazards. They choose less polluted areas, have more information or skills in acquiring health-related information, better nutrition, fewer health-reducing behaviors (cigarette smoking), and more appropriate medical care usage which leads to higher well being and life expectancy. Better health of individuals also has impact on higher labor market earnings through reduced pain and suffering, reduced mortality, lower medical care expenditures, less time allocated to treatment of illness.²⁹

2.1.3.3 Lower Fertility Rates

It is a social benefit externality especially in poor countries. One evidence shows that education of women under ninth grade leads to lower population growth rates through the effect of education in lowering fertility. Lower fertility rates contribute to higher per capita income among poor families and thus decline in poverty.³⁰ A study in Turkey also shows that there is a significant decrease in the fertility rates by means of increase in the level of education.³¹ In brief, there is a negative relation between the increase in educational level especially of women and fertility rates, which in turn contributes to well being of countries.

²⁷ L. Feinstein, R. Sabates, T. M. Anderson, A. Sorhaindo and C. Hammond, **What are the effects of education on health?** OECD, Measuring the Effects of Education on Health and Civic Engagement: Proceedings of the Copenhagen Symposium, 2006, pp. 171-177

²⁸ S. Baum and K. Payea, p.19

²⁹ B. Wolfe, S. Zuvekas, **Nonmarket Outcomes of Schooling**, Institute for Research on Poverty Discussion Paper no. 1065-95, May 1995

³⁰ McMahan, **Appraisal of Investment**, p. 54

³¹ Turkmen, p.56

2.1.3.4 Democratization

Since the effect of education on democratization last long years, this relation generally becomes out of the criteria in the policy decisions. Democratization doesn't contribute to economic growth directly, but contributes to human rights in higher degrees.³²

Research indicates that college education promotes civic engagement (promotes to be effective and engaged citizens in democratic society), including participation in volunteer activities, voting in local and national elections, and increased understanding of other racial and ethnic groups. The evidence in 2004 showed that people with higher education reported having volunteered to perform some type of community service 15% more than people with high school degree.³³ There is a significant relation between educational levels of education and voting rate which also shows the effect of education on democratization. Moreover, college graduates are more likely than other adults to donate blood.³⁴

2.1.3.5 Greater Political Stability

This external social benefit comes about in the regressions as a result of democratization that the degree of democratization has a highly significant relation to more permanent political stability which in turn yields to more investments in physical capital thus economic growth. Countries with widespread illiteracy like Sub-Saharan Africa where 50-80% of the population is illiterate, still struggle with the endless civil wars that create instability, in turn hinder investments. On the other hand, countries where the democracy and political stability widespread like Latin America now, take advantage of accelerated economic growth.³⁵

³² McMahon, **Appraisal of Investment**, p. 55

³³ A. Cunningham, Director of Research for the Institute for Higher Education Policy, **The Broader Societal Benefits of Higher Education**, Solutions for Our Future Project, Washington, D.C.

³⁴ S. Baum and K. Payea, p.24

³⁵ McMahon, **Appraisal of Investment**, p. 55

The contributions of education to democratization, human rights and political stability can begin to realize after 15-20 years and impacts can extend to hundred years, so a longer perspective is needed especially in political decisions on educational investments.

2.1.3.6 The reduction of poverty and inequality

It is especially a private benefit for poor countries but at the same time a social benefit which lowers the burden on social welfare and criminal justice systems. More educated people are less likely to be unemployed and less likely to live in poverty and reduced poverty improves the overall well-being of the population. Within each household type in US Society, the poverty rate for college graduates is about one third of the poverty rate for high school graduates.³⁶

2.1.3.7 Improved Environment Quality

The impacts of education on sustainable environment are the results of low rates of deforestation, less water pollution and air pollution. Deforestation includes not only the destruction of the forest but also destruction of animals, wildlife species and habitats.

There is a little evidence of education role in improving environmental quality. Education influence environmental quality through changing knowledge and behavior. Education promote environmentally responsible behavior and increasing people's effectiveness in protecting themselves from environmental hazards, for instance education enhances recognition of warning messages and years of schooling improves the transmission of information from brochures and labels.³⁷

³⁶ S. Baum and K. Payea, p.17

³⁷ V.K. Smith, **Feedback Effects and Environmental Resources**, Arizona State University - Economics Department, National Bureau of Economic Research , 1995

2.1.3.8 Lower Crime Rates

Crime is basically a problem among young uneducated men. Older, more intelligent and more educated individuals tend to commit less crime than others because their skill levels are higher. Individuals with low skill levels are more likely to participate in criminal activities. Therefore, education raises skill levels and wage rates, which then lowers crime; especially high school graduation significantly reduces the probability of an individual who will commit crime in early adulthood. A study showed that education, training, and work subsidies can reduce criminal activity, but wage subsidies only have short-term effect on lower crime which have more severe outcomes in the long-run.³⁸

Keeping young people off the streets and under supervision, by increasing the secondary schools and two year community colleges enrollment rates which leads to greater employability, is crucial to achieve lower crime rates. Thus a worldwide data shows that gross secondary enrollment rates together with the lower employment rates make a significant contribution to lower violent and property crime rates.³⁹

Results: Review of Social and Economic Benefits of Education and Relationship between Education and Economic Growth

The first part of this thesis was devoted to review of of relation between education and economic growth as well as the economic and social benefits of education. The results of this review demonstrated that new theories of growth give a central role to human capital, hence to education in the economic growth. Many studies has been explained the positive effect of education on the economic growth, i.e. GDP growth (per capita, output per worker) by means of different variables of education like educational level, education expenditures, education investments and schooling rates in all levels.

³⁸ L. Lochner, **Education, Work, and Crime: Theory and Evidence**, Rochester Center for Economic Research, Working Paper No. 465, 1999

³⁹ McMahon, **Appraisal of Investment**, p. 56

The studies about the relation between education and earnings relation demonstrated that earnings increase with each level of education. The employment opportunities and the educational earnings advantage increase with age for the individuals with higher education. Moreover, generally females earn less than males with similar levels of educational attainment, but this dispersion of earnings is interpreted in caution because of many reasons like the use of different data (earnings before tax or net of tax, inclusion of part time and seasonal work or not), different minimum wage legislation, and the strength of unions.

Both individual and public sector have costs and benefits while investing in education. If these costs of education translate into higher benefits; then individuals and governments have incentive to invest in further education. This incentive to invest in education can be measured by economic returns to education through Net Present Value (NPV) or Internal Rate of Return (IRR) calculations. The overall results from the rate of return calculations of OECD- Education at a Glance publication are that in most countries, private and public returns of tertiary education are higher than upper secondary or post-secondary non- tertiary education and there are significant variations between countries. Private returns are higher than social returns but indirect social benefits are not included in the calculations which may cause the underestimation of social returns. Moreover, the financial rewards of investing in education are lower for females than males in most countries in OECD Education at a Glance publication. However, another study showed that women receive higher returns to their schooling investments than those of men. Therefore, comparing the rate of returns from different studies have restrictions and not advisable, primarily due to the use of different variables, data and methodologies.

Additionally, the social benefits of education were reviewed in the literature. Social benefits are invisible but constitute the huge part of educational benefits for all individuals and society. Since these indirect benefits of education are hard to measure, they are not included into rate of return calculations. However, there are some studies which analysed the indirect benefits of education. These studies argued that education leads to better private and public health, lower fertility rates, enhanced democratization, greater political stability, decreased poverty and inequality, improved environment quality, and lower crime rates; besides the increase in labor productivity and earnings.

2.2 LISBON STRATEGY AND EDUCATION & TRAINING OBJECTIVES

2.2.1 Lisbon Strategy

2.2.1.1 A Glance to Lisbon Strategy

Globalization and new knowledge driven economy have been two challenges that affect every aspect of people's lives in new world. Thus European economy required a radical change, to become more competitive in the future through a clear strategic goal, as it is "Lisbon Strategy"

At the European Council meeting on 23-24 March 2000 in Lisbon, a ten-year strategic goal has been set to make the European Union: **"become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion"**⁴⁰

This strategy is built on three pillars; economic, social and environmental. The economic pillar includes the transition to a competitive, dynamic, knowledge-based economy. The social pillar aims to modernize the European social model through investing in people and fight against social exclusion. The Member States are expected to invest in education and training, and to conduct an active policy for employment in order to accelerate the process. The environmental pillar draws attention to economic growth that must be accomplished through the decoupling from the use of natural resources. This pillar was added at the Göteborg European Council meeting in June 2001.⁴¹

The transition process is categorized into more specific targets in the report of Lisbon European Council, which gathered two main objectives with sub-objectives. The first objective of the process is *"Preparing the transition to a competitive, dynamic and knowledge-based economy"* with sub-objectives: Information society for all; establishing a

⁴⁰ Lisbon European Council, 23 and 24 March 2000, Presidency Conclusions, S.2, http://www.europarl.eu.int/summits/lis1_en.htm

⁴¹ EUROPA:Glossary, Lisbon Strategy, http://europa.eu/scadplus/glossary/lisbon_strategy_en.htm

European Area of Research and Innovation; creating a friendly environment for starting up and developing innovative businesses, especially SMEs; economic reforms for a complete and fully operational internal market; efficient and integrated financial markets and coordinating macro-economic policies: fiscal consolidation, quality and sustainability of public finances

The second major objective is “*Modernizing the European social model by investing in people and building an active welfare state*” with sub-objectives which are education and training for living and working in the knowledge society; More and better jobs for Europe: developing an active employment policy; modernizing social protection and promoting social inclusion.

Transition to a Competitive, Dynamic and Knowledge-Based Economy

One of the important tools to become a knowledge based economy is to set an information society. For this strategy *-information society for all-*, new goods and services, should be prompted to shift a digital, knowledge based economy and every citizen should be equipped with the skills to live in the new information society. A legal framework has to be adopted for electronic commerce, on copyright and related rights. The costs of using the internet have to be reduced. The Member States ensure that every school will have an access to the internet, and all the teachers need to have skills to use internet by 2001, and the main public services have to be electronically accessed by 2003.

Research, innovation and education are the most crucial areas for the success and development of the Lisbon Strategy. Therefore, *Establishing a European Area of Research and Innovation* is one of the sub-objectives in the process. In accordance with this aim, research activities should be better integrated and coordinated at national and union level in a decentralized and non-bureaucratic manner. Innovation and ideas should be rewarded through patent protection. The specific objectives are removing the obstacles to the mobility of researchers by 2002 and attracting and retaining high-quality research talent in Europe; linking research institutions, universities, as scientific libraries, scientific centers and schools with high-speed electronic networks; improving environment for private research investment,

R&D partnerships and developing appropriate networks between national and joint research R&D programs in the Member States by the end of 2001..

Investment, innovation, and entrepreneurship are important factors for the competitiveness and dynamism of businesses. Efforts are required to lower the costs of doing business and other obstacles that are burden for SMES in order to *create a friendly environment for starting up and developing innovative businesses.*

Another objective in the strategy is about *economic reforms for a complete and fully operational internal market.* Internal market should be completed in certain sectors in order to remove barriers to services; and liberalization should be speeded up in areas such as gas, electricity, postal services and transport.

Efficient and integrated financial markets foster growth and employment by better allocation of capital and reducing its cost, so they are important for pushing new ideas, supporting entrepreneurial culture and promoting access to and use of new technologies.⁴²

Coordinating macro-economic policies is another tool for the success of process since preserving macro-economic stability, stimulating growth and employment as well as macro-economic policies should speed up the transition towards a knowledge-based economy.

⁴² Lisbon European Council, March 2000

Investing in People and Building an Active Welfare State to Modernize the European Social Model

Education and training is the necessary tool for people in order *to live and work in a knowledge society*. For this aim, Europe's education and training systems need to be adapted in order to improve the quality level of employment and support the demands of new knowledge society. The new system should offer learning and training opportunities to targeted people in every stage of their lives. Schools and training centers should be all linked to the Internet. Necessary steps have to be taken in order to increase mobility of students, teachers and training and research staff; increase the new skills like IT and technological skills, and foreign languages through lifelong learning programmes and increase per capita investment in human resources.

The second tool for more modern European social model is *to develop an active employment policy for more and better jobs for Europe*. Reducing unemployment, reducing skills gaps, providing employment services with a Europe-wide data base; giving a higher priority to lifelong learning, raising the employment rate to 70% by 2010 (from an average of 61% today) and increasing the number of women in employment to more than 60% by 2010 (from an average of 51% today) are the crucial steps for the accomplishment of this objective.

Modernizing social protection has a crucial role to build a welfare state. Developing systems of social protection that secure long-term sustainability of ageing population, promoting social inclusion and gender equality, and providing quality health services are the major tools for this aim. *Promoting social inclusion* is the final sub-objective in the report. Reducing the number of people living below the poverty line and in social exclusion in the union is also important for the welfare of a state.

2.2.1.2 New Method for Coordination: OMC

Since the Lisbon Strategy is so broad, developing a common policy wasn't possible, so a new "Open Method of Coordination" (OMC) has been developed in order to implement the strategy. In OMC, each country is free to decide how to reach the goals, instead of

deciding on binding rules and common targets for whole EU.⁴³ Then the countries exchange experience, set suitable guidelines, establish benchmarks and indicators as a means of comparing progress, and make periodic monitoring and evaluation.

2.2.1.3 Wim Kok Report and Relaunching of the Strategy

In 2004, chaired by Wim Kok, the former prime minister of Netherlands, an independent review had been carried out to contribute to the mid-term review of Lisbon Strategy in March 2005. This High-Level Group of independent experts also gave recommendations to achieve the objectives. The group submitted its report, “*Facing the Challenge*”, to the Commission and Council on 3 and 4 November 2004.

The report concluded that results are disappointing and the EU was very unlikely to meet its 2010 goals because of **overloaded agenda, poor coordination, and conflicting priorities**. It also added that European Union and its Members States were failing to act on the Lisbon strategy with sufficient urgency.⁴⁴

According to Kok Report, The Lisbon Strategy is more urgent today because growth gap with North America and Asia has widened and there is a challenge of low population growth and ageing in Europe. Five policy areas requires immediate action; **the knowledge society, the internal market, the business climate, the labour market and environmental sustainability**.

Everyone has to engage to achieve the goals, meanly the Lisbon requires a long-term communication strategy that not only keeps the citizens informed, but also involves them in the process. Moreover, leaded by European Council, the Member States, European Commission and Parliament and the European Social Partners must take up their responsibility and actively participate in the implementation of the Lisbon Strategy.

⁴³ Clementina Ivan-Ungureanu and Monica Marcu, **The Lisbon Strategy**, Monica Institute of Economic Forecasting, 2006

⁴⁴ European Communities- Report from the High Level Group chaired by Wim Kok, **Facing The Challenge: The Lisbon Strategy for Growth and Employment**, November 2004

The message of Kok Report is that all the three pillars of the Lisbon Strategy (economic, social and environmental) remain valid, the priority is to boost economic growth rate and increase employment. In order to overcome the two important challenges - increasing global competition and a rapidly ageing population, Europe has to adopt and reform its economic and social model.

On 2 February 2005, the Commission proposed a new start for the Lisbon Strategy focusing on delivering stronger, sustainable growth and more and better jobs.⁴⁵

Actually, the renewed Lisbon Strategy did not change the original objectives of the Lisbon strategy but it decided that the future orientation of the strategy should focus on Growth and Jobs with the social and environmental aspects, which means that boosting growth and creating jobs are the key complementarities for the strategy without sacrificing environmental protection.

2.2.1.4 Approaching To The Deadline

While approaching to the deadline of Lisbon Strategy, Lisbon scores (Lisbon Review Rankings 2008) were published in World Economic Forum 2008, which showed the competitiveness of the member and non-member European Union countries according to the eight dimensions of the Lisbon goals.

The assessment of Europe's competitiveness is based on publicly available hard data and data from the World Economic Forum's Executive Opinion Survey (EOS). The EOS is a survey of business leaders, conducted annually over 130 countries which reflect the business community's perspective on countries' relative performances in meeting the Lisbon goals.

⁴⁵ European Commission, Communication to the Spring European Council, **Working Together for Growth and Jobs: A New Start for the Lisbon Strategy**, Brussels, 2 February 2005

Figure 6 : Score Dispersion between EU Countries

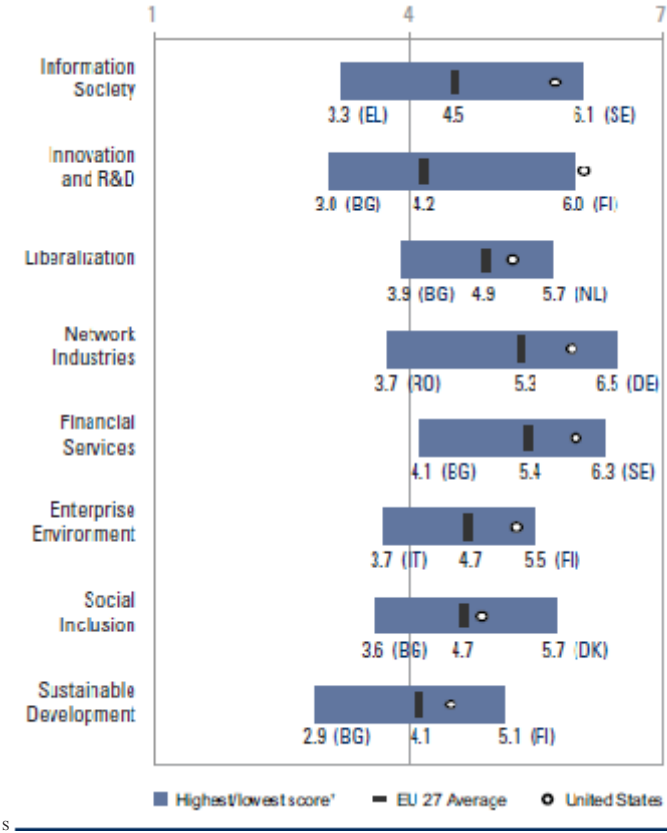


Figure 6 shows the score dispersion between the best and worst performing EU member countries according to the eight dimensions. The black dash represents the EU average and the white dot represents the US score. The score gap between EU and US is more significant in “Information Society” and “Innovation and R&D”, and it is at the smallest level in “Liberalization” and “Enterprise Environment”.

Source: World Economic Forum, Lisbon Review 2008

Table 4 shows the ranking and scores of the EU countries according to eight Lisbon dimensions. The results show that, there are great gaps regarding the performances across the countries, some making more progress than the others. Nordic countries are still at the top of the ranking while some southern European and recent accession countries are at the bottom. As it is seen in the table; Sweden, Denmark and Finland perform better than US overall, but the other EU countries are behind the US average. While EU is strong in social inclusion and sustainable development, there are still great shortfalls seen in the information society, innovation and R&D, network industries and the enterprise environment, which are the locomotive areas of becoming a “dynamic knowledge-based economy”. In addition, according to the Commission’s competitiveness report, Europe has narrowed the productivity gap with the US over the past few years. However, US labour productivity remains 39% higher than that of the EU. When we look at the important key criteria of Lisbon Strategy - employment rate-, it is seen that improvements have been accomplished, but EU couldn’t

match the objectives. The objective of %70 employment rate hasn't been realized even though it is increased according to the year 2000 rates: The employment rate was 65.9% for EU 27 in 2008 (62.2% in 2000) and 67.3% for EU15 in 2008 (63.4% in 2000)⁴⁶. Moreover, this ratio also decreased in 2009, because of today's World Economic Crisis. In conclusion in most areas, EU is still behind the United States and East Asia averages according to Lisbon criteria.

Table 4: Ranking and Scores of EU Countries

Economy	Final Index		Subindexes															
	Rank	Score	Information Society		Innovation and R&D		Liberalization		Network Industries		Financial Services		Enterprise Environment		Social Inclusion		Sustainable Development	
			Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Sweden	1	5.71	1	3.07	2	5.60	3	5.64	4	6.10	1	6.30	7	5.23	3	5.51	2	5.12
Denmark	2	5.64	3	5.71	3	5.50	4	5.61	2	6.26	2	6.17	6	5.26	1	5.74	4	5.00
Finland	3	5.64	7	5.27	1	5.95	6	5.51	6	5.90	4	6.00	1	5.48	2	5.67	1	5.13
Netherlands	4	5.44	2	5.76	5	4.86	1	5.70	7	5.91	3	6.11	5	5.26	4	5.33	7	4.56
Austria	5	5.34	5	5.00	8	4.60	2	5.66	5	6.05	5	6.05	11	4.94	5	5.15	6	4.91
Germany	6	5.34	9	4.96	1	6.08	5	5.60	1	6.17	8	5.91	16	4.70	9	5.02	5	4.96
Luxembourg	7	5.22	3	5.12	10	3.93	9	5.26	8	5.85	7	5.96	3	5.40	7	5.12	3	5.10
France	8	5.12	10	4.96	9	4.60	10	5.25	3	6.20	10	5.91	13	4.82	14	4.81	11	4.33
United Kingdom	9	5.12	5	5.42	7	4.70	11	5.16	9	6.01	11	5.92	9	5.06	15	4.69	12	4.28
Belgium	10	5.11	13	4.61	6	4.73	8	5.31	10	6.76	9	6.98	9	6.02	5	6.26	10	4.36
Ireland	11	5.00	14	4.44	10	4.44	7	5.30	16	5.13	6	6.01	2	5.46	10	5.01	9	4.40
Estonia	12	5.02	4	5.56	12	4.06	12	4.90	14	5.25	12	5.59	4	5.34	13	4.83	8	4.44
Cyprus	13	4.68	15	4.33	21	3.61	13	4.91	11	6.76	16	6.13	17	4.64	8	6.06	17	3.96
Portugal	14	4.61	16	4.32	16	3.97	18	4.70	12	5.50	16	5.42	16	4.62	13	4.34	15	4.01
Slovenia	15	4.50	12	4.71	11	4.12	19	4.43	16	5.11	21	4.90	20	4.47	15	4.61	13	4.26
Czech Republic	16	4.63	18	4.03	15	3.93	15	4.82	19	6.10	19	4.91	21	4.40	12	4.87	11	4.17
Spain	17	4.62	17	4.07	11	3.93	14	4.87	13	6.12	14	6.52	23	4.16	19	4.32	18	3.83
Malta	18	4.43	11	4.75	25	3.07	16	4.80	15	5.16	12	5.58	24	3.84	11	4.87	26	2.96
Lithuania	19	4.39	19	3.66	18	3.82	20	4.40	20	5.01	18	5.01	14	4.76	17	4.35	20	3.60
Slovak Republic	20	4.24	20	3.64	21	3.48	17	4.77	24	4.64	20	4.92	10	4.96	20	4.29	16	3.61
Latvia	21	4.25	21	3.50	23	3.40	22	4.38	23	4.55	22	4.97	12	4.87	21	4.07	19	3.63
Hungary	22	4.10	22	3.66	19	3.76	21	4.40	22	4.75	23	4.77	19	4.51	24	3.87	22	3.60
Greece	23	4.10	27	3.18	17	3.85	23	4.31	17	6.12	17	6.07	26	3.78	22	4.06	23	3.46
Italy	24	4.06	23	3.62	20	3.76	24	4.27	21	4.80	24	4.69	27	3.69	25	3.82	21	3.61
Romania	25	3.84	24	3.70	26	3.50	26	4.04	27	3.74	26	4.35	10	4.52	23	3.92	25	3.15
Poland	26	3.76	25	3.78	22	3.61	25	4.21	26	3.89	26	4.16	26	3.80	25	3.79	21	3.21
Bulgaria	27	3.68	25	3.67	27	3.04	27	3.80	26	4.08	27	4.12	22	4.21	27	3.69	27	2.99
EU27	-	4.73	-	4.53	-	4.10	-	4.50	-	5.32	-	5.41	-	4.71	-	4.66	-	4.11
United States	-	6.44	-	6.73	-	6.07	-	6.23	-	6.82	-	6.97	-	6.27	-	4.86	-	4.60
East Asia	-	5.26	-	5.36	-	5.20	-	5.20	-	5.90	-	5.65	-	5.26	-	5.09	-	4.26

Source: World Economic Forum, Lisbon Review 2008, p.8

The analysis also highlighted the performance of other countries from Eastern Europe and Central Asia according to Lisbon goals. In Table 5, Turkey ranks fourth among the 16 countries and its score is higher than those of Poland and Bulgaria and very close to that of Romania. Turkey is strong in “enterprise environment” (related to the ease to start a new company in Turkey) and “liberalization” (related to rather effective antitrust policy in the

⁴⁶ EUROSTAT: Employment Rates

country which ensures a high level of competition and comparatively high-quality players in the market, among others), which is close to EU27 average. On the other hand, Turkey should make improvements in “information society” to enhance productivity, “social inclusion”, and focus on sustainable development through well-enforced environmental legislation. In addition, Turkey still has relatively high unemployment rate and the participation rate of women in the economy is among the lowest world levels. As a result, Turkey should improve its educational system as well as professional training in order to adapt to the rapidly changing global economy.

All in all, the analysis showed that non-EU members, such as Croatia and Turkey, are performing better overall than the worst performing members, however when looking at the whole picture, efforts need to be made in most areas to bring these countries up to EU levels, especially in economic development, which is important for those countries to join the EU in the coming years.

Table 5: Rankings and Scores of Non-EU European and Central Asian Economies

Economy	Final Index		Subindexes															
	Rank	Score	Information Society	Innovation and R&D	Liberalization	Network Industries	Financial Services	Enterprise Environment	Social Inclusion	Sustainability Development								
Croatia	1	4.10	1	3.69	3	3.41	4	4.05	1	4.98	2	4.70	11	4.19	7	4.03	2	3.73
Montenegro	2	3.96	4	3.27	7	3.15	2	4.22	5	3.92	1	4.82	12	4.07	5	4.11	1	4.02
Azerbaijan	3	3.88	2	3.45	6	3.24	3	4.16	6	3.89	5	4.05	2	4.60	2	4.38	3	3.50
Turkey	4	3.82	3	3.34	5	3.25	1	4.51	4	4.18	3	4.57	3	4.51	14	3.30	9	2.89
Russian Federation	5	3.82	8	3.16	2	3.62	10	3.71	2	4.16	10	3.88	10	4.22	1	4.41	6	3.08
Kazakhstan	6	3.70	6	3.19	4	3.33	7	3.90	9	3.60	8	3.97	4	4.44	3	4.18	8	2.96
Ukraine	7	3.59	7	3.18	1	3.65	11	3.56	3	4.20	12	3.78	9	4.23	4	4.17	14	2.64
Georgia	8	3.56	11	2.89	9	2.90	5	3.96	10	3.56	6	4.00	1	4.96	9	3.80	5	3.22
Macedonia, FYR	9	3.53	8	3.17	12	2.73	6	3.91	8	3.82	4	4.05	6	4.42	15	3.29	11	2.84
Moldova	10	3.50	10	3.00	10	2.82	12	3.52	11	3.49	9	3.92	8	4.34	8	3.89	10	2.89
Serbia	11	3.44	5	3.20	8	3.00	13	3.52	7	3.82	11	3.80	14	3.89	12	3.53	13	2.65
Tajikistan	12	3.35	13	2.75	13	2.73	8	3.72	16	2.80	14	3.54	15	3.89	6	4.07	4	3.25
Armenia	13	3.29	16	2.48	11	2.79	9	3.71	13	3.19	7	3.99	13	3.94	18	3.74	15	2.48
Kyrgyz Republic	14	3.23	15	2.63	14	2.72	16	3.41	15	2.83	15	3.33	5	4.43	13	3.48	7	2.90
Albania	15	3.12	14	2.70	16	2.37	15	3.42	14	2.93	16	3.23	7	4.38	11	3.65	16	2.24
Bosnia and Herzegovina	16	3.12	12	2.83	15	2.43	14	3.47	12	3.45	13	3.63	16	3.48	16	2.92	12	2.74
EU27	-	4.73	-	4.53	-	4.18	-	4.90	-	5.32	-	5.41	-	4.71	-	4.66	-	4.11
EU15	-	5.07	-	4.86	-	4.62	-	5.22	-	5.77	-	5.79	-	4.86	-	4.92	-	4.47
Accession 12	-	4.31	-	4.13	-	3.62	-	4.51	-	4.75	-	4.93	-	4.52	-	4.34	-	3.67

Source: World Economic Forum, Lisbon Review 2008, p. 11

In conclusion, as the Lisbon Scores Review says “As a whole, and compared with dynamic and competitive economies of the US and East Asia, the greatest shortfalls are in the

areas of establishing an information society, innovation and R&D, and the enterprise environment...

*... The result is that the EU will not fully achieve the lofty goals first articulated in 2000...*⁴⁷

2.2.2 Lisbon Education And Training Objectives

Education and Training are essential for the development and success of Lisbon Strategy - knowledge society and economy. Through the relaunching of Lisbon Strategy in 2005, which gave priority to growth and jobs, education gain more importance because educated people are the base for fostering the economy. The knowledge triangle: education, research and innovation⁴⁸ have become EU's most valuable assets to be competitive in changing, globalized world.

As well as former education (pre-primary, primary, secondary, higher education), vocational education and training, and lifelong learning programs are keys for today and future's world. People's initial learning is not enough, skills must be constantly renewed, and new skills must be added continuously in order to meet the challenges of new technologies and to be more effective as ever. In conclusion, aging population of Europe and globalization of the world are the two important challenges of European Union, and education and training, especially higher education and life long learning are the lifebelts to meet the Lisbon objectives . When all society contributes to this aim, Europe will become the most competitive and dynamic knowledge-based economy in the world. More educated people means more competitive people, and more competitive people means the most competitive economy.

In the Lisbon European Council that took place in March 2000, "Education and Training" is one of the titles for being a knowledge society. As mentioned before, according to Presidency Conclusions; Europe's education and training systems need to be adapted to

⁴⁷ World Economic Forum, Lisbon Review 2008:Measuring Europe's Progress in Reform

⁴⁸ European Commission, Communication From the Commission, **Mobilising the brainpower of Europe: enabling universities to make their full contribution to the Lisbon Strategy**, Brussels, 20 April 2005

meet requirements of knowledge society and increase the quality level of employment. Therefore, learning and training opportunities should be offered in different stages of people's life.

The Council and the Commission would take the necessary steps to meet the following targets;

- a substantial annual increase in per capita investment in human resources should be realised
- the number of 18 to 24 year olds with only lower-secondary level education who are not in further education should be increased and training should be halved by 2010;
- schools and training centres, all linked to the Internet, should be developed
- learning partnerships should be established between schools, training centres, firms and research facilities for their mutual benefit;
- the new basic skills should be provided through lifelong learning: IT skills, foreign languages, technological culture⁴⁹

Even though education and training are important for new social model, most of the other titles related with the economic objective in Lisbon Strategy have a link with education. For example, in order to reach the “Information Society for All”, it is essential for every citizen to get the skills that are needed to live and to work in a new information society in order to be prevented from info-exclusion, and combating against illiteracy. Secondly, “Establishing a European Area of Research and Innovation” objective is strongly linked to education. Education, research and innovation are like the points of Lisbon Strategy triangle. Moreover, in order to achieve “More and better jobs for Europe: developing an active employment policy” lifelong learning takes the higher priority. Finally, education and training is the effective way to “Promote Social Inclusion”.

Education and Training 2010 Work Programme links up to the Bologna Process, which is crucial in the development of the European Higher Education Area

In 2001, the report from Education Council to the European Council adopted the future objectives of education and training systems (ETS). The council first considered the general aims of education and training systems that society attributes to. These aims are the development of individual, development of society and development of economy. Then, they

⁴⁹ European Council, **Presidency Conclusions, Lisbon** 23 And 24 March 2000, http://www.europarl.europa.eu/summits/lis1_en.htm

continued with the challenges of the new world. According to the report, new economic structures and societies are increasingly driven by information and knowledge. Working life is changing, new skills are required, knowledge cannot be expected as static, and lifelong learning is the key of employability.

Demographic structure is changing. Young and skilled people are becoming a scarce resource and teaching staff is also aging (about half of teachers are aged 40 or more and 20% will have retired within the next ten years within the union), so continuous learning is important as ever to achieve the aim of sustainable development. Moreover, varied migration flows should also be considered.

Finally, education and training systems are the key factors for equal opportunities and social inclusion. Access to the updating of skills is important to fight against social exclusion, and the promotion of equal opportunities. Education and training systems should aim to contribute to remove discrimination at all levels.

All in all, world is changing and computers are becoming more widely available at work and at home, so information and communication technology (ICT) set the frames of future education and training systems. Although European citizens are already the best educated and the European ETS rank among the best in the world, in order to become competitive, Europe should plan the future including the use of the new ICTs.

The report finally adopted the future objectives of education and training systems for coming ten years as follows;

- Increasing the quality and effectiveness of education and training systems in the European Union
- Facilitating the access of all to the education and training systems
- Opening up education and training systems to the wider world⁵⁰

⁵⁰ Council of the European Union, Report from the Education Council to the European Council: **The Concrete Future Objectives of Education And Training Systems**, Brussels, 14 February 2001

OBJECTIVE 1: Increasing the quality and effectiveness of Education and Training Systems in the European Union

This objective includes: 1) Improving education and training for teachers and trainers; 2) Developing skills for the knowledge society through increasing literacy and numeracy, updating the definition of basic skills for the knowledge society, maintaining the ability to learn(maintaining curiosity and interest in new developments and skills); 3)Ensuring access to information and communication technologies to everyone through equipping schools and learning centres, involving teachers and trainers(all teachers should be skilled in the use of the Internet and multimedia resources by the end of 2002), using networks and resources(co-operation both within and between schools, and individual learners); 4) Increasing the recruitment to scientific and technical studies; and 5) Making the best use of resources .

OBJECTIVE 2: Facilitating the access of all to the education and training systems

Everyone accepts that education and training systems must be adapted to a world of lifelong learning. This objective includes; open learning environment, making learning more attractive and supporting active citizenship, equal opportunities and social cohesion.

OBJECTIVE 3: Opening up education and training systems to the wider world

It includes strengthening the links with working life and research, and society at large, developing the spirit of enterprise, improving foreign language learning, increasing mobility and exchanges and strengthening European co-operation.

2.2.2.1 Sixteen Indicators and Five Benchmarks to Follow the Progress

Since it is hard to follow the objectives, the Council in May 2007 defined 16 core indicators in order to monitor progress towards the Lisbon objectives.

Sixteen core indicators for monitoring progress towards the Lisbon objectives:⁵¹

1. Participation in pre-school education
2. Special needs education
3. Early school leavers
4. Literacy in reading, mathematics and science
5. Language skills
6. ICT skills
7. Civic skills
8. Learning to learn skills
9. Upper secondary completion rates of young people
10. Professional development of teachers and trainers
11. Higher education graduates
12. Cross-national mobility of students in higher education
13. Participation of adults in lifelong learning
14. Adult skills
15. Educational attainment of the population
16. Investment in education and training

These indicators enable the Commission and the Member States to analyze the progress in EU and national levels, to identify the performance of countries, to enable comparison both between EU countries and third countries.

In addition, in May 2003, in order to guide the progress on the Education and Training 2010 Work Programme, the Council adopted 5 benchmarks to be achieved by 2010.

Five EU benchmarks to be achieved by 2010 were;

1. No more than 10% early school leavers
2. Decrease of at least 20% in the percentage of low-achieving pupils in reading literacy
3. At least 85% of young people should have completed upper secondary education
4. Increase of at least 15% in the number of tertiary graduates in Mathematics, Science and Technology (MST), with a simultaneous decrease in the gender imbalance
5. 12.5% of the adult population should participate in lifelong learning.⁵²

⁵¹ Education, Youth and Culture Council: Council Conclusions of 25 May 2007: On a coherent framework of indicators and benchmarks for monitoring progress towards the Lisbon objectives in education and training, Brussels, 30 May 2007

⁵² Council of the European Union, Council Conclusions on Reference Levels of European Average Performance in Education and Training (Benchmarks), Brussels, 7 May 2003

2.3 COUNTRY PERFORMANCES ACCORDING TO FIVE LISBON BENCHMARKS

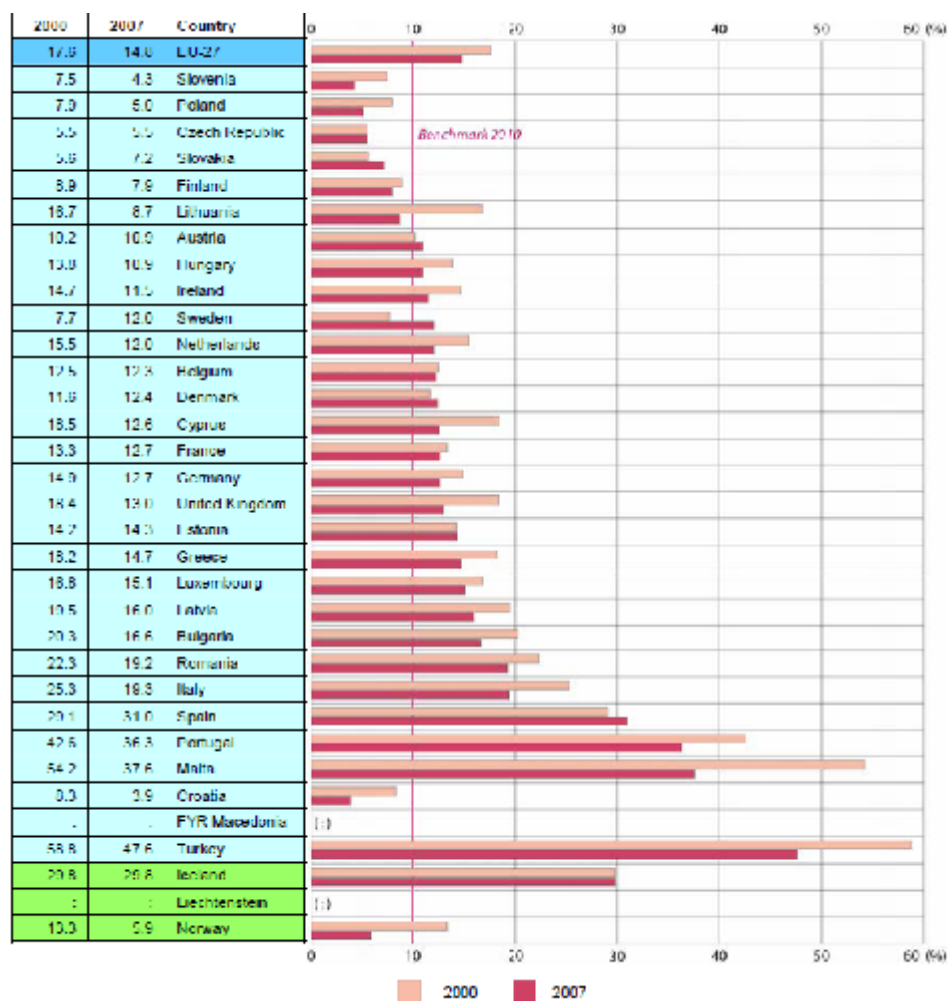
2.3.1 Early School Leavers (No more than %10)

The young people between the age of 18 to 24 who leave education after lower secondary education⁵³ or less and don't attend any form of education and training are a big obstacle for EU to develop a knowledge-based economy and social cohesion. Since early school leavers have disadvantages especially in the labor market, their personal and social development is in danger and they have a risk of a life of poverty and social exclusion.

The factors that influence early school leaving are; 1)individual characteristics like learning difficulties, health problems and low self-esteem ; 2)education related reasons: For example if young people have low achievements in the school, negative reactions from their teachers, or are discouraged or disconnected from the school, they perceive that the upper level of education can be unsatisfactory for them; 3)job-related reasons: A moderate level of employment may prevent early school leavings; 4)family related reasons: Families can have financial difficulties or negative attitudes to their children's education; 5)peer affects: Rejection by friends cause a risk of early school leaving. Discrimination in schools and community effects can also be counted as a reason for early school leaving.

⁵³ Secondary education is the stage after the primary school. Lower secondary education just after primary school before high school and upper secondary education refers to high school education.

Figure 7: Early School Leavers



Source: European Commission, Progress Report 2008, p. 122⁵⁴, (EUROSTAT-Labor Force Survey)

Continuous improvement in reducing the share of early school leavers has been achieved in the recent years. However the EU-27 average: 14.8% is still more than 10% benchmark and lots of the countries are above the benchmark.

It is seen from the **Figure 7** that the EU progress and performance on the benchmark are stronger in some new Member States: Slovenia, Poland, the Czech Republic, and Slovakia. Finland, Norway and Croatia also perform best. However, it is important to add that

⁵⁴ European Commission Staff Working Document(DG Education and Culture), **Progress TowardsThe Lisbon Objectives in Education and Training; Indicators And Benchmarks 2008**

recent data in Slovenia and Croatia are unreliable for these countries because of the small sample size in the Labour Force Survey.

Turkey, Malta, Portugal, Spain, Iceland and Italy have high percentages of early school leavers. Two new members, Romania and Bulgaria, are the low achievers after them.

Turkey has the highest percentage, as it is 47.6% , ranked last in the list, which means one of two young people aged between 18-24 leave the education after compulsory education without attending any education and training program further. When we compare Turkey's percentage of 47.6%, with the aim of 10%, it can be easily seen that necessary steps should be taken as soon as possible.

All in all; while in the majority of countries the percentage of early school leavers decreased between 2000 and 2007, at the current rate of improvement, the objective of the benchmark of "No more than 10 % early school leavers" can not be reached by 2010.

2.3.2 Low achievers in reading (Decrease of at least 20%)

Literacy in reading, mathematics and science; language skills, ICT skills and civic skills are important skills for society to overcome the challenges of globalization.

European benchmark for low-achieving reading was adopted to analyze the performance of 15 year-old pupils in reading literacy and the aim was to reduce the percentage of 15-year-olds in reading literacy in the European Union by at least 20% by 2010, compared to 2000. A significant reduction in the share of low achievers in the EU from 21.3% in 2000 to 17% in 2010 was anticipated. However, this proportion increased significantly from 21.3% in 2000 to 24.1% in 2006, which is an increase of more than 13% and which is against the benchmark for 2010. Actually, in order to reach the benchmark, a 30% reduction would be needed now.

For the area of literacy in reading, the data come from the OECD PISA Survey. **PISA** (The Programme for International Student Assessment) is an international survey that is administrated between 4,500 and 10,000 15-year-old schools students in 62 countries every 3

years. The first assessment was conducted in 2000 and it was aimed to analyze the acquired knowledge and skills of students for full participation in society after compulsory education.

Reading literacy is defined in PISA as “...*understanding, using and reflecting on written texts, in order to achieve one’s goal, to develop one’s goals, to develop one’s knowledge and potential and to participate in society.*”⁵⁵ By means of the expansion of “Lifelong Learning” concept, literacy is no longer considered as an ability that is only acquired in childhood during the early years of schooling. Instead, it is viewed as an expanding set of knowledge, skills and strategies which individuals built throughout their life in various situations as well as through interactions with their peers and with the larger communities in which they participate.⁵⁶

The PISA reading literacy survey aims at determining if students are well prepared for future challenges, if they can analyze, reason and communicate effectively, if they have the capacity to continue learning throughout life. PISA Reading Assessment measure 5 aspects: retrieving information, forming a broad general understanding, developing an interpretation, reflecting on and evaluating the content and the form of a text. These aspects are measured because pupils who have a level under 2 are considered to be inadequately prepared for the challenges of society and lifelong learning concept.

Reading Literacy in EU Countries

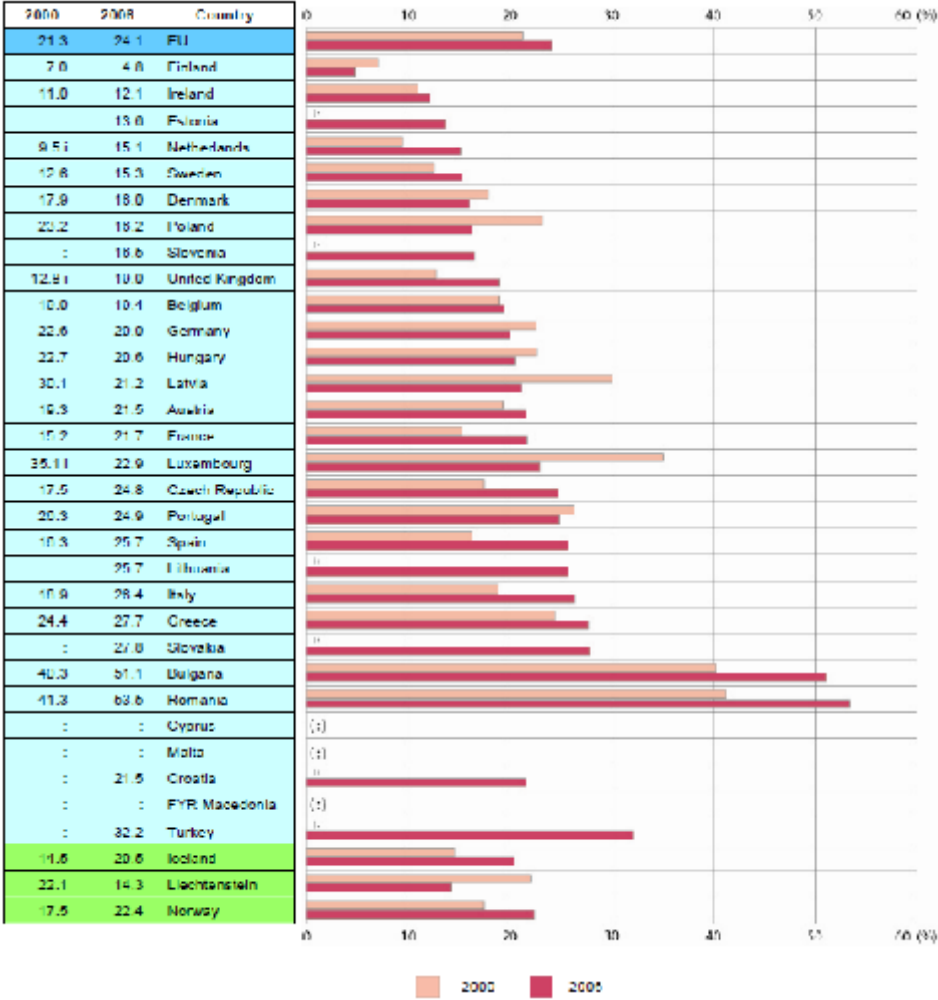
There are large differences between the member states. (See Figure 8) As in 2000, Finland has been the top performer since 2000 in the level of low achievers in reading. Even though its level was already the best in 2000, it made a significant progress and achieved 4.8 % low achievers in reading, which lead to a huge gap even between the second top performer and Finland. Ireland, Estonia, Netherlands and Sweden followed Finland. Bulgaria and Romania had a share of low achievers more than 50%. Turkey was the third worst performer after Bulgaria and Romania. While performance had worsened in many countries from 2000

⁵⁵ OECD, Programme for International Student Assessment, **A Framework for PISA 2006:Assessing Reading Literacy** , www.pisa.oecd.org

⁵⁶ OECD, **A Framework for PISA 2006:Assessing Reading Literacy**, p. 2

to 2006; Poland, Latvia, Luxemburg, Germany and Hungary have been successful to reduce the level of low achievers, but only Poland caught up with the benchmark within those countries.

Figure 8: Percentage of pupils with reading literacy proficiency level 1 and lower on the PISA reading literacy scale, (2000 and 2006)

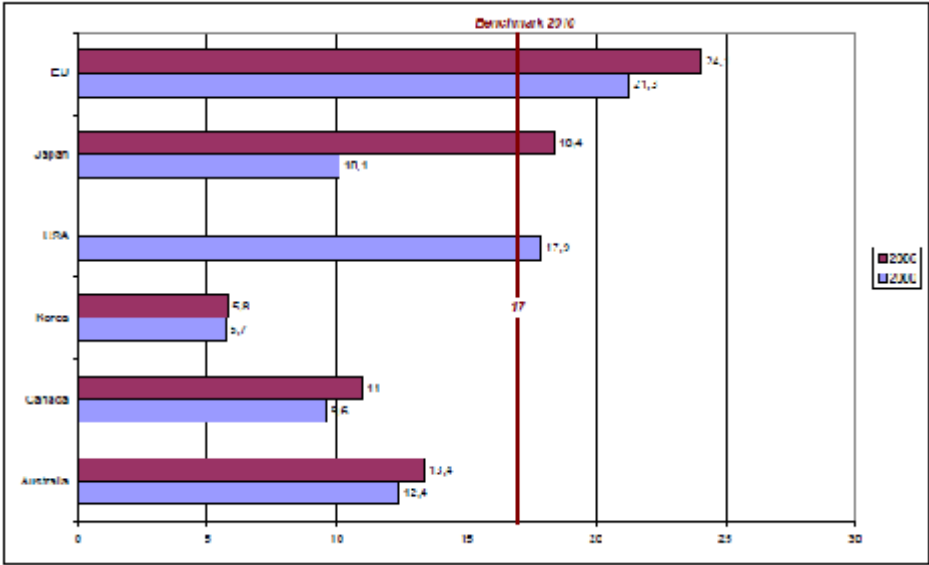


Source: European Commission, Progress Report 2008, p. 94 (OECD PISA database 2000 and 2006)

When we compare Europe with the outside countries like Japan, US, Korea, Canada and Australia, the share of low achievers also deteriorated in these countries like Europe. (The deterioration for USA is from 2000 to 2003, since no data is available for 2006) Japan showed a significant increase from 2000(10.1%) to 2006(18.4); but Korea, Canada and Australia was

relatively stable in the same period. However the average of 21.3% in 2006 of EU was still behind the performance of those countries. In other words, these countries are at a level below the EU benchmark of 17%. At the same time, it is important to add that the best performing countries in the EU (Finland, Ireland, etc.) are also among the best performers in the world.

Figure 9 : Low achievers in reading on the PISA reading literacy scale: EU and selected third countries



Source: OECD PISA 2000 and 2006 database

In all Member States females perform better than the males, as the share of low achievers in reading is 17.6% for girls and 30.4% for boys. The smallest gender gaps are in Netherlands and United Kingdom.

2.3.3 Completion of Upper Secondary Education(at least 85% young people)

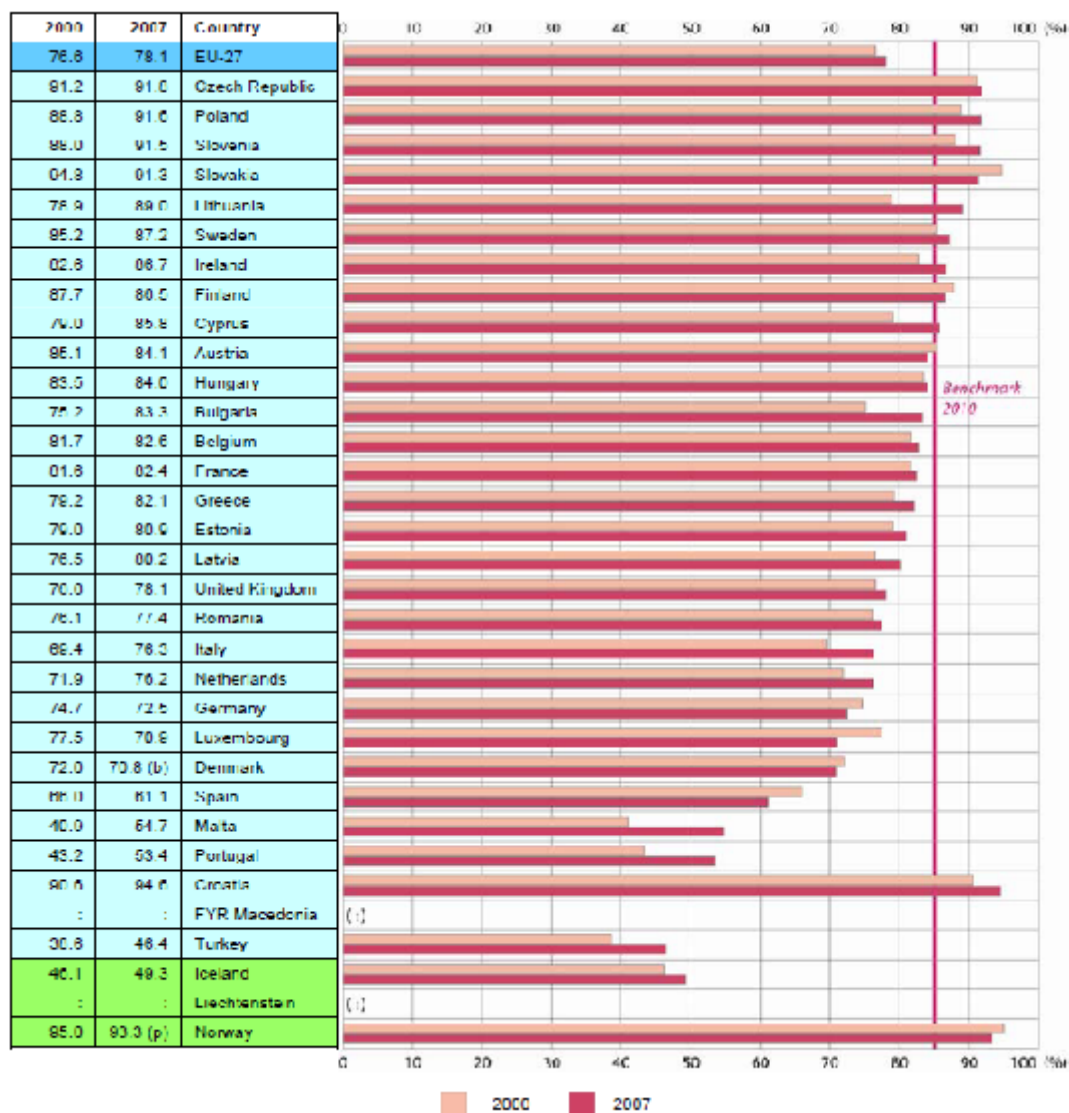
EU Benchmark says that at least 85% young people should have completed upper secondary education by 2010. Upper secondary education corresponds to the final stage of secondary education in most countries and the entrance age to this level is typically 15 or 16 years old ⁵⁷, as it is called in Turkey: High School. This upper secondary attainment level is also important for its contribution to the lifelong learning concept, because 25-64 year-olds are 3 times more likely to participate in lifelong learning if they have completed at least upper secondary education.⁵⁸

EU-27 average for upper secondary attainment level of 20-24 aged young people was 78.1% in 2007. Only a little progress (1.5% points) has been made since 2000, as it's 76.6%. There is still 7% points ahead in order to catch up the benchmark which is impossible with this increasing rate of 1.5% in 7 years. However, 11 countries (including Croatia and Norway) have already exceeded the benchmark for 2010. 6 countries, namely Croatia, Norway, Czech Republic, Poland, Slovenia and Slovakia, have an average more than 90%,. Malta (54.7) and Portugal (53.4) have the lowest levels within EU countries, but at the same time, these 2 countries have made a significant progress more than 10% points like Lithuania. Luxemburg and Spain's upper secondary attainment levels have even fallen more than 5% since 2000 which might be explained by migration (many young adults have been in education outside the national education system). Turkey took the lowest attainment level in the list, even it increased its level from 38.6% (2000) to 46.4% in 2007.

⁵⁷ OECD Glossary of statistical terms, <http://stats.oecd.org/glossary/detail.asp?ID=5450>

⁵⁸ European Commission, **Progress Report 2008**, p. 9

Figure 10: Percentage of the population aged 20-24 having completed at least upper-secondary education, 2000-2007



Source: European Commission, Progress Report 2008, p. 35, (EUROSTAT)

NOTES: Croatia, Iceland, Norway: 2006 instead of 2007, HR: 2002 instead of 2000, (p) provisional value (b) = break in series

2.3.4 Mathematics, Science and Technology Graduates (Increase of at least 15%)

The total number of graduates in mathematics, science and technology (**MST**) in the European Union should be increased by at least 15% by 2010 while at the same time the level of gender imbalance should be decreased. MST includes life sciences, physical sciences, mathematics and statistics, computing, engineering and engineering trades, manufacturing and processing, architecture and building.⁵⁹

Science and Technology are essential for the knowledge-based and digital economies, as well as they are key factors to be competitive in the rapidly changing world.

The Council underlined the importance of education with a supply of science specialist that is vital for the target of increasing the overall spending on research and development (R&D) to 3% of GDP by 2010, which is set by Barcelona European Council .In addition, the Council had a declaration of encouraging young people, especially women, in scientific and technical studies as well as ensuring the long-term recruitment of qualified teachers in these fields.

EU has performed above the level expected for 2010 and the number of tertiary MST students has increased by more than 29% since 2000. The target growth of 15% implies an absolute increase of 100 000 graduates by 2010. However, an increase of 200 000 graduates has already been achieved, reaching to 886 000 MST graduates in 2006, from the rate of 686 000 graduates in the base year 2000.

When we look at the performances of the countries to increase their MST graduates at **Table 6**; Italy, Poland, Slovakia and Portugal have the highest growth rate for the period of 2000-2006, which is over 10% per year. Czech Republic, South Cyprus, Malta, Iceland and Turkey followed them according to the growth rates. Turkey also had a good performance that increased its MST graduates by an average of %6.3 per year from 57 100 graduates in 2000 to 82 400 graduates by 2006. On the other hand, if we look at the MST graduates per 1000 inhabitants aged 20-29, Ireland and France ranked firsts with more than 20 graduates per 1000, followed by Lithuania, Finland, United Kingdom and Sweden. . EU-27 average is 13

⁵⁹ European Commission, Progress Report 2008, p.227

graduates per 1000, which is between the level of Japan (14.4 graduates) and United States (10.3 graduates). By 2006, EU-27 had 886 100 MST graduates as a total while United States had 424 800, and Japan 225 800.

There is one important point to stress about the MST graduates in emerging economies: For instance, China reached 2 million MST graduates in 2006, which is more than 4 times of the figures in the year 2000. This huge pool of MST graduates in low wage countries has a growing impact on high-tech worldwide industries and it is thought to be an important factor for comparative advantage of developed countries.⁶⁰

It is expected for MST graduates to increase in the next few years in EU, like the trend until 2006. However, because of the long-term demographic trends, especially the strong decline in birth rates in the new Member States after 1989, a decline is expected in the number of MST students and graduates after 2010.

It is important to note that only increasing the number of MST graduates cannot be effective, the long term attractiveness of Europe in terms of R&D is still a challenge. If there are enough attractive opportunities for researchers in Europe, then a significant percentage (14%) of EU researchers do not move to US and more researchers from other countries prefer Europe.⁶¹

⁶⁰ European Commission, Progress Report, p.76

⁶¹ Susan Robertson, Peter Jones (GlobalHigherEd) , **Is the EU on target to meet the Lisbon objectives in education and training?**,18 October 2007 , <http://globalhighered.wordpress.com/2007/10/18/the-eus-progress-toward-meeting-the-lisbon-objectives-in-education-and-training/>

Table 6 : Graduates in Mathematics, Science and Technology

	Number of graduates (in 1000)			Per 1000 inhabitants aged 20-29	Growth in graduates per year	Growth in graduates
	2000	2005	2006	2006	2000-2006	2006
EU-27	686.2	873.5	886.1	13.0	4.4	1.4
Belgium	12.9	14.1	13.8	10.6	1.2	-2.0
Bulgaria	8.1	9.7	9.5	8.5	2.7	-2.4
Czech Republic	9.4	13.2	15.6	10.0	8.9	18.8
Denmark	8.5	9.4	8.6	13.8	2.1	-8.1
Germany	80.0	93.5	103.7	10.7	4.4	11.0
Estonia	1.5	2.4	2.2	11.2	7.1	-6.3
Ireland	14.5	16.8	15.3	21.4	1.0	-8.8
Greece	:	16.3	:	10.1 (05)	:	:
Spain	65.1	78.5	75.9	11.5	2.6	-3.3
France	154.8	179.0	166.3	20.7	1.2	-7.1
Italy	46.6	88.9	:	12.4 (05)	13.8	:
Cyprus	0.3	0.4	0.5	4.3	8.1	27.0
Latvia	2.4	3.3	3.0	8.9	2.4	-8.0
Lithuania	6.6	9.0	9.5	19.5	6.3	4.7
Luxembourg	0.1	:	:	:	:	:
Hungary	7.2	7.9	8.7	5.8	3.2	10.8
Malta	0.2	0.2	0.3	5.0	8.1	:
Netherlands	12.5	16.9	17.6	9.0	6.0	4.3
Austria	7.5	10.1	11.3	10.8	7.0	11.7
Poland	39.2	70.8	85.4	13.3	13.8	20.5
Portugal	10.1	18.7	19.0	12.6	11.1	1.7
Romania	17.1	35.3	35.6	10.5	5.5	0.8
Slovenia	2.6	2.9	2.8	9.5	0.9	-4.4
Slovakia	4.7	9.4	9.5	10.3	12.3	0.9
Finland	10.1	11.8	11.9	17.9	2.7	1.0
Sweden	13.0	15.3	16.1	15.1	3.7	5.3
United Kingdom	140.6	139.8	138.7	17.8	3.4	-0.8
Croatia	:	3.5	3.7	6.0	2.9	5.6
FYR Macedonia	1.2	1.3	1.4	4.3	2.6	7.3
Turkey	57.1	76.5	82.4	6.2	6.3	7.7
Iceland	0.4	0.4	0.5	11.3	5.7	14.0
Liechtenstein	:	0.1	0.05	10.4	:	-17.9
Norway	4.8	5.1	5.3	9.3	1.5	4.0
United States	369.4	429.7	424.8	10.3	2.4	-1.1
Japan	236.7	226.4	225.8	14.4	-0.8	-0.2

Source: Report 2008 Progress Towards to Lisbon Education and Training Objectives, p. 77, (EUROSTAT)

The EU Target for total graduates also includes the decline of gender imbalance in MST areas. We are going to look at the proportion of female MST graduates in total, which shows us the gender imbalance. EU-27 average share of MST female graduates is 31.6%, which has increased from 30.7% since 2000. These figures show that there is no significant improvements regarding gender imbalance in MST field. Within the countries we

investigated, Japan has the lowest MST female graduates (14.6%) while USA has almost the same proportion (31.3) with EU.

Table 7 : Percentage of female graduates by field

ISCED field	% female graduates		Countries with the highest female graduates (2006)
	2000	2006	
Life sciences	61.2	62.1	Highest 2 Cyprus 63.0 Latvia 59.0
Physical sciences	38.0	44.7	Bulgaria 61.0 Poland 63.7
Mathematics, statistics	49.4	51.2	Latvia 61.0 Poland 72.7
Computing	20.9	19.6	Bulgaria 49.9 Finland 35.5
Engineering	15.6	18.3	Romania 32.9 Bulgaria 32.2
Manufacturing	40.7	46.2	Denmark 66.7 Lithuania 79.9
Architecture, building	32.1	35.6	Greece 49.6 Italy 45.4

Source: EC- Progress Report, p.80

Macedonia, Bulgaria and Estonia have the highest female shares in the field of MST, followed by Portugal, Poland and Romania.(see Table 8) Turkey has a share of 29.8 % in 2006, which shows a decrease from a share of 31.1% in 2000. The biggest gender gap in MST graduates is seen in Netherlands (18.4 %). However, when we look at the fields other than MST (see Table 7), for example at life sciences, female graduates have a dominance with a share of 62.1% . In addition, there is a gender balance in the mathematics and statistics. Female graduates proportion at the lowest levels in the field of computing and engineering, as it is 19.6% and 18.3% respectively.

Table 8: Share of females in all MST Graduates

	Females as a proportion of all MST graduates		
	2000	2005	2006
EU 27	30.7	31.3	31.6
Belgium	25.0	27.3	26.5
Bulgaria	45.6	41.1	41.2
Czech Republic	27.0	27.4	26.5
Denmark	20.5	33.9	34.1
Germany	21.6	24.4	26.6
Estonia	35.7	43.5	42.0
Ireland	37.9	30.5	29.1
Greece	:	40.9	:
Spain	31.6	29.6	30.0
France	30.0	20.4	27.9
Italy	36.6	37.0	36.1
Cyprus	31.0	38.1	36.9
Latvia	31.4	32.8	32.4
Lithuania	35.9	35.2	31.6
Luxembourg	:	:	:
Hungary	22.6	30.0	27.9
Malta	26.3	30.1	26.9
Netherlands	17.6	20.3	18.4
Austria	19.9	23.3	24.5
Poland	35.0	36.3	30.2
Portugal	41.9	39.9	39.7
Romania	35.1	40.0	38.6
Slovenia	22.8	26.2	25.7
Slovakia	30.1	35.3	34.8
Finland	27.3	29.7	26.5
Sweden	32.1	33.8	34.4
United Kingdom	32.1	30.8	30.8
Croatia	:	32.7	36.3
FYR Macedonia	41.6	46.9	46.0
Turkey	31.1	28.5	29.8
Iceland	37.9	37.2	:
Liechtenstein	:	28.6	19.6
Norway	26.8	26.0	26.4
United States	31.8	31.1	31.3
Japan	12.9	14.7	14.6

Source: EC, Progress Report 2008, p.79

In 2006, 55% of the tertiary students and 57.6% of the graduates were female. Even though there is an imbalance in the MST field, there is also an imbalance in the student population as a whole in favour of women in Europe.

2.3.5 Lifelong learning participation (12.5% of the adult population)

During the last fifty years, the concept of learning can not be limited with childhood or classroom, place, or time; instead it is perceived as learning that lasts throughout the life, which is called Lifelong Learning (LLL). Lifelong learning is an important instrument to enhance social inclusion, active citizenship and personal development, competitiveness and employability.⁶²

The EU Benchmark says that 12.5% of the adult population should participate in lifelong learning by 2010. 2007 results for EU-27 show that 9.7% of 25-64 year olds participated in lifelong learning whereas it was estimated 7.1% in 2000. The progress is slow and EU is still behind the benchmark.

Participation in lifelong learning is becoming a reality for the citizens of Sweden, Norway, the United Kingdom, Denmark, and Iceland, which have developed a comprehensive and coherent lifelong learning strategies and have a LLL participation rates over 18%. Finland (23.4%), Netherlands (16.6%), Slovenia (14.8%) and Austria (12.8%) have already exceeded the benchmark and with Spain all of these countries are above the European Average.

Romania and Bulgaria have the lowest performances with the LLL participation rate of 1.3%, which is so far away both from the EU average and the benchmark. Turkey also is one of the low performers that has recorded a 1.5% participation rate in 2007 and 1.8% in 2008. No data is available for the Macedonia. Greece (2.1%) has also a low participation rate. All in all, Lifelong Learning concept hasn't been given sufficient importance yet in these countries, namely Bulgaria, Romania, Turkey and Greece, followed by Hungary, Slovakia and Portugal. Necessary policy adoptions should be made as for Lifelong Learning in those low achiever countries.

⁶² Wikipedia : lifelong learning, www.en.wikipedia.org/wiki/Lifelong_learning

Figure 11: Lifelong Learning participation Rate⁶³

Percentage of the adult population aged 25 to 64 participating in education and training



Source: EC, Progress Report, p. 27 (EUROSTAT- EU Labor Force Survey)

NOTES:

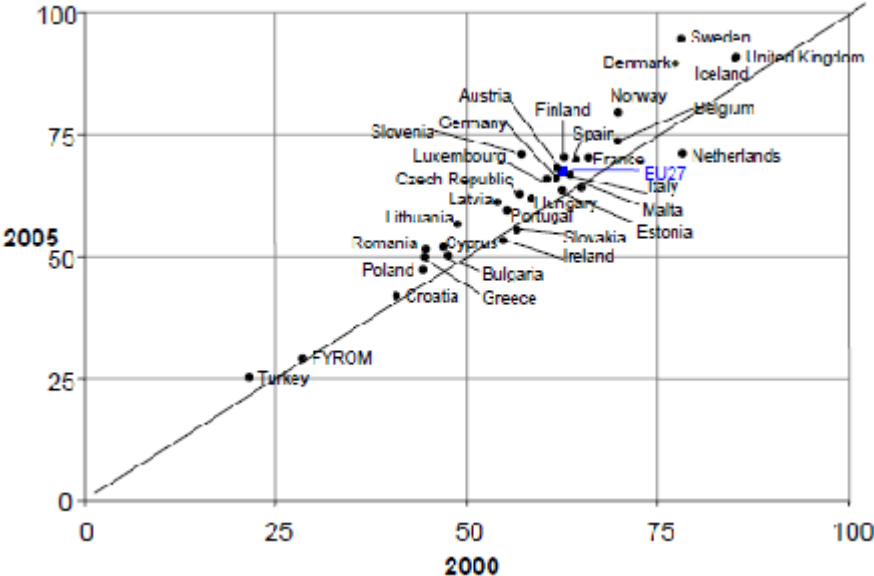
- a. 2006 data for SE, UK, HR, IS
- b. (:) Missing or not available, (e) Estimated data, (b) Break in series, (p) Provisional data

It is important to add that a measurement of "making lifelong learning a reality for all" is not an easy issue, so it cannot be measured by simple statistics. In order to overcome

⁶³ Life-long learning refers to persons aged 25 to 64 who stated that they received education or training in the four weeks preceding the survey (numerator). The denominator consists of the total population of the same age group, excluding those who did not answer to the question 'participation to education and training'.

this problem CRELL (The Centre for Research on Lifelong Learning)⁶⁴ constructed an index that provides a complementary picture of different rates of participation in pre-school, school, higher education and adult learning for 4-64 year olds across the EU. In the study, the participation in formal and non- formal education and training in the best performing countries in the EU was taken as a reference level. The index combines Early Childhood Education (participation of 4-year-olds in education), EDU (participation in primary, secondary and tertiary education of the population aged 5 to 29) and LLL - participation in lifelong learning (i.e. the persons aged 25 to 64 who stated that they received education or training in the four weeks preceding the Labour Force Survey) as percentage of population aged 25 – 64. It is calculated as the simple arithmetic average of three indicators: ECE, EDU and LLL.

Figure 12: Index on “Making lifelong learning a reality”



Source: EC, Progress Report, p. 28 (CRELL, 2008)

Each those index components (ECE, EDU and LLL) are assigned equal weight in the overall index in accordance with the principle of considering each stage of lifelong learning participation as being of equal importance

⁶⁴ The Centre for Research on Lifelong Learning based on indicators and benchmarks (CRELL) was established in order to gather expertise in the field of indicator-based evaluation and monitoring of education and training systems. CRELL combines fields of economics, econometrics, education, social sciences and statistics in an interdisciplinary approach to research.

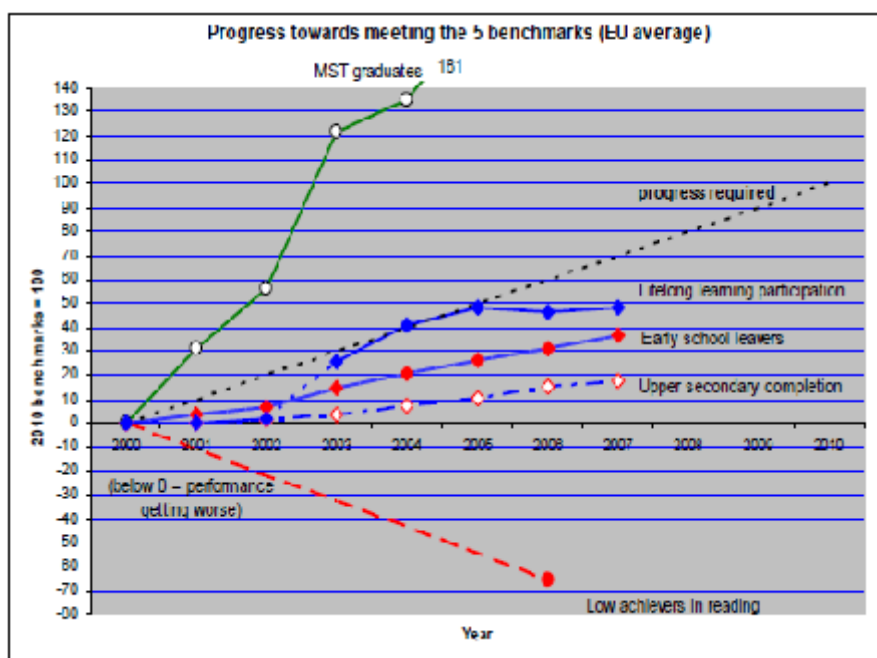
According to “Making Lifelong Learning Reality Index”, Scandinavian Countries and UK are again the top performers. These countries have progressed notably faster than the EU average. For example, Sweden increased its LLL level by 18.7 points, Denmark by 11.3, and UK by 5.6, whereas the average level of EU performance increased by 1.5 points during the period 2000- 2005. The participation is also above the European average for Slovenia, Finland, France, Austria, Spain, Belgium and the Netherlands.

All in all, the CRELL index shows that there is a progress towards lifelong learning participation in the EU, mainly in pre-school and school/higher education participation. However, at the same time, the progress is too slow to reach the benchmark in adult learning participation. Some new member states, as well as the candidate countries like Turkey should increase their participation rates by giving importance to the lifelong learning concept.

Results: Performance of Countries according to Five Lisbon Benchmarks

The council adopted 5 benchmarks that should be achieved by 2010, in order to guide the progress on Education and Training towards Lisbon Objectives. However, except the benchmark for Mathematics, Science and Technology (MST) graduates, EU Average is still behind the targets for the other 4 benchmarks and the situation for reading literacy of young people is even getting worse. (See Figure 13)

Figure 13 : Progress towards meeting the five Lisbon benchmarks for 2010



Source: EC, Progress Report 2008, p.11 (DG Education and Culture)

In this chart the starting point (in 2000) is set at zero and the 2010 benchmark at 100. The results achieved each year are measured against the 2010 benchmark (= 100). The diagonal line shows the progress required, i.e. an additional 1/10 (10%) of progress towards the benchmark has to be achieved each year to reach the benchmark. If a line stays below this diagonal line, progress is not sufficient; if it is above the diagonal line progress is stronger than what is needed to achieve the benchmark. If the line declines, the problem is getting worse.

In the case of lifelong learning, it should be kept in mind that there have been many breaks in the time series, which tend to overstate the progress made, especially in 2003. Therefore the 2002-2003 line on LLL participation is dotted. For low achievers in reading (data from the PISA survey) there are results for 18 EU countries for only two data points, 2000 and 2006. It is therefore not yet possible to assess to what extent the observed differences are indicative of longer-term trends.

For MST graduates, the target was to increase the number of graduates at least 15% by 2010. EU has performed above the expected level and increased its level over 29%. A growth of 15% corresponds an increase of 100 000 graduates by 2010, however an increase of 200 000 graduates has already been achieved. Actually, almost all countries have increased

their MST Graduates rates since 2000. According to the growth rate for MST graduates during the period of 2000- 2006; Italy, Poland, Slovakia and Portugal are the top performers by 2006. On the other hand, if we look at the MST graduates per 1000 inhabitants aged 20-29, Ireland, France, Lithuania, Finland and United Kingdom ranked firsts with more than 15 graduates per 1000. Turkey increased its MST graduates by an average of %6.3 per year, but still has 6.2 MST graduates per 1000 inhabitants aged 20-29, which implies that continues increase should be gone on.

The benchmark for MST graduates also has a target to decrease the level of gender imbalance in MST area. EU-27 average share of MST female graduates is 31.6% in 2006, which shows that there has been an increase of only a 0.9 point since the year 2000. This means that there has not been a significant improvement. However there was a female majority in tertiary students in the fields other than the MST fields.

The case for the benchmark of early school leavers is still behind the target. The aim is having no more than 10% early school leavers, who are the young people between the age of 18 to 24 and who leave education after lower secondary education or less and don't attend any form of education and training. The EU-27 average was 14.8% in 2007, which is against the 10% target. Some new members; Slovenia, Poland, the Czech Republic, Slovakia have a strong progress as well as Finland, Norway and Croatia have. Turkey, Malta, Portugal, Spain, Iceland and Italy are the low performers which have high percentages of early school leavers. Two new members; Romania and Bulgaria follows them. Actually, Turkey is the lowest performer, which had a 47.6% of low achievers in 2007, and ranked last in the list.

EU performance for the benchmark for "low achievers in reading literacy" is even worsening. The target was decreasing the percentage of low-achieving 15-year-olds in reading literacy at least 20% by 2010, which corresponds 17% average level of low achievers in 2010, compared to the 21.3% in 2000. However, the EU average level had increased to 24.1% in 2006 instead of decreasing. Finland is the top performer and Ireland, Estonia, Netherlands, Sweden, Denmark, Poland, Slovenia and Liechtenstein were the countries that have a low share of low achievers and are moving ahead above the EU benchmark. The performance was

worsening in many countries during the period of 2000-2006 and Bulgaria and Romania had a share of low achievers more than 50% as well as Turkey, the third worst performer which had a share of 32.2% low achievers in reading literacy in 2006. The share of low achievers also deteriorated in the countries like Japan, US, Korea, Canada and Australia during the years 2000-2006 like the case in Europe. However, although the EU average level is more than these countries, at the same time the best performing countries in the Europe Union are also among the best performers in the world.

EU progress and performance on the benchmark of upper secondary completion rates, that at least 85% young people should have completed upper secondary education by 2010, is slow. EU-27 average for upper secondary attainment level of 20-24 aged young people was 78.1% in 2007, which was 76.6% in 2000. However 11 countries had already exceeded the benchmark for 2010 and Croatia, Norway, Czech Republic, Poland, Slovenia and Slovakia have an average more than 90%. Malta and Portugal have the lowest levels within EU countries. Turkey took the lowest attainment level in the list, but it increased its level from 38.6% (2000) to 46.4% in 2007.

The last benchmark of lifelong learning participation rate says that 12.5% of the adult population should participate in lifelong learning by 2010. EU average in 2007 was 9.7%, which corresponds a slow progress when compared with the 2000 rates, as it's 7.1%. EU average is still behind the benchmark. However, participation in lifelong learning has become a reality for the citizens of Sweden, Denmark, the United Kingdom and Iceland, in which the LLL participation rates are over 25%. Finland and Norway also have high participation rates. Romania and Bulgaria have the lowest performances, followed by Turkey which has a 1.8% participation rate in 2008. The countries which have highest LLL participation rates have developed a comprehensive and coherent lifelong learning strategies and there is a big gap between countries with these top performers, which implies that the low performance countries should give sufficient importance to Lifelong Learning concept and make necessary policy adoptions as soon as possible.

All in all, except in the benchmark for Mathematics, Science and Technology (MST) graduates, the progress is slow in most EU countries according to the other 4 benchmarks;

early school leavers, low achievers in reading literacy, upper secondary attainment and life long participation. Most of the EU countries are still behind the targeted averages regarding to these 4 benchmarks. Even the reading literacy of young people got worse during the period of 2000 and 2006. In addition, in the MST graduates benchmark, there is still a gender imbalance in favour of male, which is against the additional target of this benchmark.

Turkey has a bad performance on the benchmarks, except for the MST graduates. Actually, in the benchmarks for early school leavers, reading literacy of young people and upper secondary attainment, Turkey is among the worst performers. In the case for the lifelong participation, Turkey is the third worst performer after Romania and Bulgaria, which means that necessary steps should be taken as soon as possible in these key areas of Education and Training.

2.4 COUNTRY PERFORMANCES ACCORDING TO SIXTEEN CORE INDICATORS

At the Education Council Meeting on 24-25 May 2007, in order to follow-up the Lisbon Objectives in the area of education and training, the Ministers adopted 16 core indicators. The Commission had proposed a framework of 20 indicators, but only 16 of the indicators were accepted by the Council. The 16 indicators on education and training are;

1. Participation in pre-school education
2. Special needs education
3. Early school leavers
4. Literacy in reading, mathematics and science
5. Language skills
6. ICT skills
7. Civic skills
8. Learning to learn skills
9. Upper secondary completion rates of young people
10. Professional development of teachers and trainers
11. Higher education graduates
12. Cross-national mobility of students in higher education
13. Participation of adults in lifelong learning
14. Adult skills
15. Educational attainment of the population
16. Investment in education and training

The data for the benchmarks and indicators mostly comes from EUROSTAT and OECD surveys. Therefore, the council stress that enhancing the corporation with the other international organizations which are active in this field (e.g. OECD, UNESCO, IEA) is important in order to improve international data coherence. In addition to corporation, Council also stress that “periodic monitoring of performance and progress through the use of indicators and benchmarks is an essential part of the Lisbon process, allowing the identification of strengths and weaknesses with a view to provide a strategic guidance and steering for both short and long term measures of the Education and Training 2010 strategy.

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⁶⁵ Council Conclusions on new indicators in education and training, of 24 May 2005

2.4.1 Participation In Pre-School Education

Participation in early childhood education is the participation of 4 year-old children in pre-primary and primary education and the EU-27 average has increased during the period of 2000 and 2007 from 82.7% to 88.6%. Almost all the 4 year-old pupils in France, Italy, Belgium and Sweden participate in pre-school education. The progress was more 10% during the period of 2000 and 2007 in Germany, South Cyprus, Latvia, Slovenia, Romania and Sweden. Actually, Sweden showed the highest performance and reached 100% enrollment rate. However, there are large differences between countries: For instance, whereas 15 European Countries exceed 90% enrollment rate in childhood; Finland, Ireland, Poland, Croatia, Macedonia and Turkey have an early childhood enrollment rate of almost below 50%.

Turkey and Macedonia are the countries that have the lowest enrollment rates .The data has been available for Turkey since 2004. The enrollment rate of 4 year-old children in education was 3.4% in 2004 and increased to 10.1% in 2007, which is still the lowest level within the European Countries. The second lowest level belongs to Macedonia, still 8% more than Turkey, as it was 18.6% in 2007. However, there are positive attempts to disseminate pre-school education in Turkey recently. In order to launch compulsory education in pre-school level, Ministry of National Education of Republic determined 32 cities with high schooling rate and started a pilot project in these cities. Pre-school education has become compulsory since the beginning of 2009-2010 educational year in these cities.

Table 9: Participation rate of 4-years old in education at ISCED level 0-1⁶⁶

geo/time	2000	2001	2002	2003	2004	2005	2006	2007
Austria	"79.5"	"79.2"	"80.7"	"82.5"	"82.1"	"82.5"	"83.2"	"84.6"
Belgium	"99.2"	"100.0"	"100.0"	"100.0"	"99.9"	"100.0"	"100.0"	"99.9"
Bulgaria	"67.0"	"66.8"	"74.6"	"76.6"	"72.6"	"73.2"	"68.4"	"71.1"
Switzerland			"33.0"	"34.2"	"34.9"	"38.6"	"38.0"	"38.7"
South Cyprus	"55.7"	"58.4"	"58.3"	"58.1"	"61.2"	"61.4"	"70.4"	"73.6"
Czech Republic	"81.0"	"87.0"	"88.3"	"89.8"	"91.2"	"91.4"	"86.5"	"87.8"
Germany (including ex-GDR from 1991)	"81.4"	"85.9"	"88.9"	"85.9"	"84.3"	"84.6"	"93.1"	"94.2"
Denmark	"90.6"	"92.0"	"92.3"	"93.2"	"93.4"	"93.5"	"93.4"	"95.0"
Estonia	"78.2"	"80.4"	"82.1"	"80.9"	"83.9"	"84.2"	"86.1"	"88.3"
Spain	"99.0"	"100.0"	"100.0"	"99.5"	"100.0"	"99.3"	"97.1"	"98.4"
European Union (27 countries)	"82.7"	"84.5"	"86.3"	"84.6"	"84.5"	"85.6"	"86.8"	"88.6"
Finland	"41.9"	"42.8"	"44.0"	"44.7"	"46.1"	"46.7"	"48.5"	"50.3"
France	"100.0"	"100.0"	"100.0"	"100.0"	"100.0"	"100.0"	"100.0"	"100.0"
Greece	"53.9"	"55.8"	"55.9"	"57.0"	"57.2"	"57.8"	"56.1"	"55.7"
Croatia				"41.4"	"42.0"	"44.9"	"48.2"	"50.0"
Hungary	"89.5"	"89.6"	"90.2"	"91.6"	"92.3"	"90.7"	"92.8"	"92.4"
Ireland	"51.1"	"49.9"	"49.5"	"48.7"	"46.6"	"45.4"	"46.9"	"44.8"
Iceland	"90.9"	"91.8"	"93.3"	"93.7"	"95.1"	"95.3"	"94.8"	"96.1"
Italy	"100.0"	"100.0"	"100.0"	"100.0"	"100.0"	"100.0"	"100.0"	"99.1"
Japan	"94.9"	"92.0"	"92.9"	"92.7"	"95.2"	"94.7"	"94.8"	"95.2"
Liechtenstein				"45.7"	"52.2"	"50.6"	"52.7"	"52.7"
Lithuania	"51.0"	"51.0"	"51.6"	"53.1"	"54.5"	"56.8"	"59.7"	"61.9"
Luxembourg (Grand-Duché)	"94.9"	"94.3"	"98.9"	"68.3"	"82.8"	"95.4"	"94.0"	"92.5"
Latvia	"60.6"	"62.6"	"64.7"	"66.5"	"69.1"	"72.2"	"73.5"	"76.0"
Former Yugoslav Republic of Macedonia	"12.4"	"11.7"	"13.8"	"14.8"	"15.6"	"15.4"	"15.9"	"18.6"
Malta	"100.0"	"95.0"	"92.6"	"98.7"	"97.5"	"94.4"	"95.5"	"98.8"
Netherlands	"99.5"	"98.1"	"99.1"	"73.0"	"74.0"	"73.4"	"74.2"	"98.9"
Norway	"78.1"	"80.1"	"81.4"	"84.2"	"86.9"	"88.9"	"91.8"	"93.8"
Poland	"33.3"	"32.4"	"32.7"	"34.1"	"35.7"	"38.1"	"41.2"	"44.4"
Portugal	"72.3"	"76.0"	"78.7"	"81.9"	"79.9"	"84.0"	"80.6"	"80.9"
Romania	"59.0"	"60.3"	"64.2"	"66.2"	"75.2"	"76.2"	"75.8"	"77.2"
Sweden	"72.8"	"75.5"	"77.8"	"82.7"	"87.7"	"88.9"	"86.5"	"100.0"
Slovenia	"67.7"	"70.0"	"72.3"	"73.5"	"77.8"	"75.9"	"79.3"	"81.8"
Slovakia		"68.4"	"68.5"	"70.0"	"71.7"	"74.0"	"73.1"	"74.1"
Turkey					"3.4"	"5.0"	"7.0"	"10.1"
United Kingdom	"100.0"	"99.0"	"100.0"	"95.3"	"92.9"	"91.8"	"90.9"	"90.7"
United States	"61.7"	"56.1"	"67.5"	"61.6"	"64.1"	"65.3"	"58.2"	"61.4"

Source: EUROSTAT

2.4.2 Special Needs Education

There is a problem with the definition of special needs education because there is no specific definition that makes it possible to compare the countries. Policy makers, practitioners, researchers and the community do not agree on who have a disability or special need, because special need can arise from two possible sources; first from persons themselves and second from the environment. The International Standard Classification of Education

⁶⁶ ISCED Level 0 refers to pre-primary education and ISCED level 1 refers to primary education

(ISCED), which was designed by UNESCO (See Annex II) has expanded the definition of special education needs: first it has come into use as a replacement for the term “special education”; second it refers more than education of children with disabilities now. Instead, it is an education for children who may be included in handicapped categories and “need an additional support depending on the extent to which schools need to adapt their curriculum, teaching and organization and/or to provide additional human or material resources so as to stimulate efficient and effective learning for these pupils.”⁶⁷ In addition, it is also accepted in many countries that the children that need special education should be educated in the regular system instead of separated special institutions.

In recent years, EU has made a significant development in the area of inclusion of students who need special education in the mainstreaming. European Year of People with Disabilities in 2003, signing of the United Nations “Convention on Rights of People with Disabilities” in 2006 and the Lisbon Declaration-Young People’s on Inclusive Education that was published by European Agency for Development in Special Needs Education in 2007 are some of the improvements that are carried out by EU in recent years. “UNESCO Salamanca Statement and Framework for Action on Special Needs Education” that was ratified by more than 92 governments including all European Countries and Turkey in 1994, is an important key point which set a conceptual framework of many countries’ policies on special needs education. The guiding principle of the statement is that inclusion of pupils who need special education into the regular system is the most effective way of combating discrimination and building an inclusive society.

The data for the students needing special education are based on two international data; one is European Agency for Development in Special Needs Education and the other is OECD data. Data collected by the European Agency enable us to compare the countries in regards to the students needing special education, however the data cannot provide any information of the quality, suitability and appropriateness of the education.

⁶⁷ UNESCO 29th session General Conference, November 1997: **International Standard Classification of Education - I S C E D 1997**, http://www.unesco.org/education/information/nfsunesco/doc/isced_1997.html

There are large differences between countries in the range of percentages of pupils who have special education needs, from 0.01% to 19%. The reason for this is the fact that some countries count all pupils who receive any form of support, whereas some countries only count pupils that receive intensive form of support. In addition, there are no accepted definitions in countries for special needs in their educational legislation or policymaking. Therefore, it is not possible to compare the countries, but the Table 10 tells us that at present 3.6% of pupils in compulsory education have some form of special educational needs, 2% of pupils in Europe who needs special education continue their education in segregated settings⁶⁸, which means that the students spend most of the school week in a separate school or class.

Table 10: Pupils recognised as having special education needs

	Percentage of pupils in compulsory education recognised as having special education needs	Percentage of pupils in compulsory education with special needs in segregated settings ⁶⁹	
	2008	1999	2008
EU	3.6	2.1	2
Belgium (Flemish speaking community)	5.8	4.9	5.1
Belgium (French speaking community)	4.4	4	4.4
Bulgaria	2(2006 data)	2.1	1.2
Czech Republic	8.6	4.9	4.5
Denmark	3.2	1.5	2.9
Germany	5.6	4.6	4.9
Estonia	19	3.4	4.8
Ireland	1	1.8	1
Greece	1.9	0.3	0.5
Spain	2.6	0.4	0.6
France	2.7	2.6	1.9
Italy	0.01	0.5	0
South Cyprus	4.3	0.4	0.2
Latvia	4	3.2	4
Lithuania	11.4	1.1	1.2
Luxembourg	2.3	1	1.1
Hungary	6	4	3
Malta	3.8	:	0.4
Netherlands	3.7	1.8	2.4
Austria	4.1	1.6	2
Poland	2.9	2	1.6
Portugal	3.7	0.3	0.3
Romania	:	1.4	:
Slovenia	5.4	1.9	1.6
Slovakia	:	3.2	:
Finland	7.7	3.7	3.9
Sweden	1.5	1.3	0.1
United Kingdom(England)	2.8	1.1	1.1
United Kingdom(Scotland)	5.5	:	1.3
United Kingdom(Wales)	3.5	:	1.5
Croatia	:	:	:
Turkey	:	:	:
Norway	5.7	0.5	0.3
Iceland	19.7	0.9	0.3

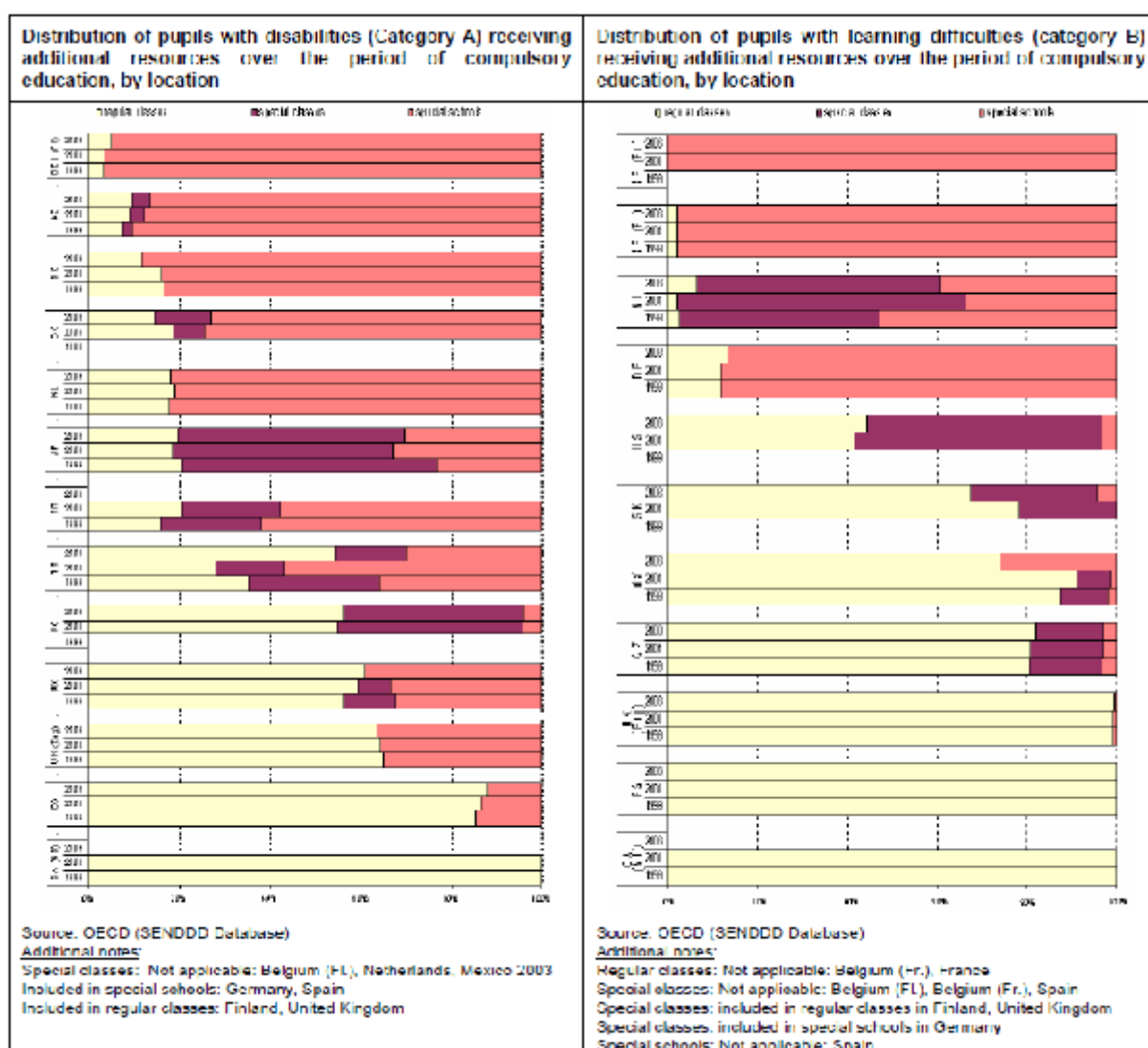
Source: European Agency for Development in Special Needs Education

⁶⁸ Segregation refers to education where the pupil with special needs follows education in separate special classes or special schools for the largest part (80% or more) of the school day.

⁶⁹ The percentage of pupils in compulsory education who are taught in segregated settings because of their special education needs is calculated as a percentage of the total compulsory school-age population.

OECD classifies the special needs data in 3 categories: 1) **"Disabilities"** (Category A) who have clear organic reasons for their difficulties in education 2) **"Difficulties"** (Category B), pupils with emotional and behavioral difficulties or specific difficulties in learning, and 3) **"Disadvantages"** (Category C): pupils who have problems due to aspects of their socioeconomic, cultural or linguistic background and need additional educational resources.

Figure 14 : Distribution of pupils with special education needs according to categories of needs(1999-2003)



Source: EC, Progress Report 2008, p.137, (OECD)

Figure 14 shows the variation in the distribution of pupils in categories A and B, who are educated in special schools, special classes, and regular classes in 1999, 2001, 2003. There is a substantial variation between countries in which the pupils in these categories are in regular schools. Special classes and schools are more common for category A pupils in Belgium (Fl.), the Czech Republic, Germany, the Slovak Republic and the Netherlands. In addition, high proportion of category B pupils is educated in special schools and classes in Belgium (Fl. and Fr.), Netherlands and Germany. In United Kingdom and Spain, only a small proportion of pupils in category A are attending special schools and almost all pupils in Category B are going to the regular schools in these countries. In Canada all pupils in category A and B are integrated into the regular system. The data for Turkey shows that there is a trend to the inclusion of the pupils in category A into the regular schools. Almost half of these pupils are going to special classes or schools. However, it is important to add once again that the differences of countries may result from different national policies concerning inclusion of pupils who need special education, for example it can be influenced by features of regular schools and their curriculum, and training and attitudes of teacher.

2.4.3 Early School Leavers

Early school leavers are the young people between the age of 18 to 24 who leave education after lower secondary education or less and don't attend any form of education and training. Since the personal and social development of early school leavers is in danger, they have disadvantages especially in the labor market and have a risk of poverty and social exclusion. On average, the share of early school leavers was 14.8 % (2007) in Europe. This proportion is still behind the objective but there has been a continues improvement in recent years. The further information about this indicator of education can be found in the "Five Lisbon Benchmarks" section.

2.4.4 Literacy in reading, mathematics and science

Reading Literacy in EU got worse during the period of 2000 and 2006 as we mentioned before. EU-27 percentage of pupils who have a proficiency level 1 and lower (low achievers) on the PISA reading literacy scale was 24.1% in 2006, which was more than the targeted level of 17% by 2010.

The average of EU in low performers in mathematics is 21.2% according to OECD PISA Survey, which is lower than the percentage of low achievers in reading literacy, but this is the average of 17 member states⁷⁰ where data are available. Finland is the top performer within the all OECD countries and only had a 6% low achievement proportion in mathematics skills (level 1 or lower than level 1). Netherlands, Estonia and Denmark also have the smallest number of low performers in mathematics. In Romania (52.7%), Bulgaria (53.3%) and Turkey (52%)⁷¹ more than half of the pupils are in the category of low performers in Math.

We can compare the PISA Data in math skills between 2003 and 2006. The majority of countries decreased its low achievers level in math. France decreased its performance most in European countries in math skills and Greece increased its performance the most by decreasing its low performers more than 10%. In addition, there is a less difference of gender in mathematics literacy than reading literacy, but boys outperformed girls in most OECD Countries.

In science area, the average proportion of low performers in EU is 20.2%, the OECD average is 19.2%. Like in the Math area, Finland is again the top performer within the OECD countries, as it only has 4.1% low performing pupils in science. Estonia, Liechtenstein, Netherlands and Slovenia have the smallest share of low achievers after Finland. Within the OECD countries, after Finland and Estonia; Hong-Kong, Canada, Macao-China, Korea Chinese Taipei, Japan and Australia have the smallest proportion of low achievers in Science.

⁷⁰ These 17 countries are Belgium, the Czech Republic, Denmark, Germany, Ireland, Greece, Spain, France, Italy, Luxembourg, Netherlands, Austria, Poland, Portugal, Slovakia, Finland and Sweden.

⁷¹ OECD PISA Database, Student Performance in Reading and Mathematics from PISA 2000 To PISA 2006- Tables, <http://www.oecd.org/dataoecd/31/0/39704446.xls>, T.6.2a

Like in the math skills, almost half of the pupils in Romania (48.3%), Bulgaria (46.7%) and Turkey (50.2%)⁷² have a level of 1 or lower than 1 in science literacy. In regards to gender difference, in the majority of the countries there is no significant gender difference in science literacy unlike in reading and math literacy.

In three 3 literacy skills, most countries have the smallest share of low performers in science.

2.4.5 Language skills

The language scene in Europe is varied. There are 20 official languages in European Union, in addition there are regional or minority languages and those spoken by migrant populations. School is the main tool for pupils in order to learn a foreign language.

It is obligatory to learn at least one foreign language in compulsory education in all member states except Ireland and Scotland, and a second language is optional. The 2002 Barcelona European Council underpinned the importance of foreign language learning within the Lisbon Process as well as the European integration by saying further action should take place in teaching at least two foreign languages from a very early age.⁷³ Learning a foreign language is important for mediation and intercultural understanding between countries. Moreover, learning a foreign language should be intensively integrated into lifelong learning.

English is the most widely taught foreign language in general secondary education in the great majority of Member States. German is the second most widely taught foreign language in over a third of the countries considered. This is the case particularly for Nordic countries and those of central and Eastern Europe. French is the second most widely taught language in the countries of southern Europe, and especially the Latin countries (Spain, Italy and Portugal), as-well as Greece, Romania and German-speaking countries. In the three Baltic countries (Estonia, Latvia, Lithuania) and in Bulgaria, Russian occupies this position. In only five countries, the second most widely taught language is another language: Spanish in France

⁷² OECD PISA Database, Student Performance in Science - Tables, <http://www.oecd.org/dataoecd/30/20/39704105.xls> , T. 2.1a

⁷³ European Council - Presidency Conclusions, Barcelona 15-16 March 2002, paragraph 44

and Sweden, Italian in Malta, Swedish (Finnish for Swedish-speaking pupils) in Finland and Danish in Iceland. Spanish and Italian occupy third and fourth position in a significant number of countries.⁷⁴ In several countries, the percentage of pupils learning French or German has been slightly decreasing.

Table 11 : The most widely taught foreign languages and the percentage of pupils who learn them, general secondary education (ISCED 2 and 3), 2005/06

	1st	2d	3rd	4th		1st	2d	3rd	4th		1st	2d	3rd	4th
BEfr	NI 71.7	● 67.1	■ 4.0	⬥ 1.8	FR	● 97.5	⬥ 41.5	■ 17.1	▼ 4.9	PT	● 80.7	▲ 61.1	⬥ 1.6	■ 0.9
BEde	‡ ‡	‡ ‡	‡ ‡	‡ ‡	IT	● 96.3	▲ 46.1	■ 7.2	⬥ 6.9	RO	● 95.0	▲ 86.5	■ 10.0	○ 1.9
BEnl	▲ 96.8	● 70.7	■ 23.3	⬥ 1.1	CY	● 93.9	▲ 67.6	▼ 14.3	⬥ 3.7	SI	● 96.4	■ 47.8	▼ 5.3	▲ 5.1
BG	● 75.4	○ 28.0	■ 75.9	▲ 17.7	LV	● 96.5	○ 42.7	■ 77.4	▲ 1.9	SK	● 74.7	■ 47.6	⬥ 6.7	▲ 4.5
CZ	● 81.4	■ 34.3	▲ 6.2	⬥ 2.0	LT	● 90.1	○ 55.4	■ 24.3	▲ 4.3	FI	● 99.3	SW 92.0	■ 22.0	▲ 11.6
DK	● 100.1	■ 84.0	▲ 15.3	⬥ 8.6	LU	■ 99.2	▲ 99.2	● 61.0	⬥ 1.9	SE	● 100.0	⬥ 32.4	■ 25.6	▲ 17.6
DE	● 96.0	▲ 25.1	⬥ 4.5	○ 1.8	HU	● 64.2	■ 44.4	▲ 3.2	▼ 1.7	UK	▲ :	■ :	⬥ :	Other :
EE	● 92.9	○ 59.6	■ 30.0	EE 25.1	MT	● 93.9	▼ 57.6	▲ 37.1	■ 8.2	IS	● 87.3	OA 70.1	■ 17.9	⬥ 10.5
IE	▲ 65.3	■ 20.9	⬥ 8.3	▼ 1.0	NL	● 45.1	■ 38.9	▲ 31.6	‡ ‡	LI	‡ ‡	‡ ‡	‡ ‡	‡ ‡
EL	● 96.9	▲ 37.2	■ 23.1		AT	● 98.8	▲ 12.9	▼ 5.7	⬥ 2.2	NO	● 100.0	■ 29.3	▲ 18.6	⬥ 9.5
ES	● 97.5	▲ 35.6	■ 2.1	▼ 0.1	PL	● 80.3	■ 42.8	○ 7.3	▲ 5.0	TR	● 67.3	■ 6.5	▲ 0.7	▼ 0.0
<p>● English ▲ French ■ German ⬥ Spanish ▼ Italian ○ Russian</p>														

Source: EUROSTAT & EURYDICE , Key data on teaching languages at school in Europe, p.69

The percentage of pupils learning English has been increasing since 2002, especially in the countries of central and Eastern Europe. The EU-27 average level for learning English was 73.6% in 2001 and the level increased to 85.7 % in 2006. (See Annex III) Moreover, learning a foreign language is higher in the upper secondary education than in the lower secondary education. It is important to add that, the statistics do not measure the proficiency level in foreign language. Accordingly, the Commission has launched a major survey to measure the proficiency of European schoolchildren in two foreign languages at the final stage of lower secondary education but the findings will be published in 2012 for the first time, which will allow us to see the real levels of language skills that children possess.⁷⁵

100% of pupils learn English in Denmark, Malta and Sweden in lower secondary education and in the Czech Republic and in the Netherlands in upper secondary education. In

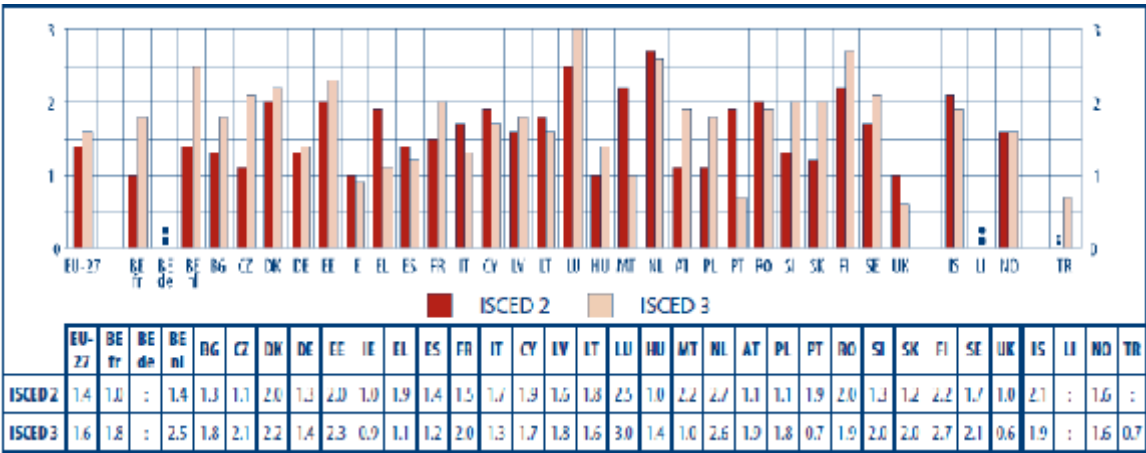
⁷⁴EUROSTA&EURYDICE: Key data on teaching languages at school in Europe, 2008 Edition, p.69, http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/978-92-9201-003-4/EN/978-92-9201-003-4-EN.PDF

⁷⁵ EUROSTAT & EURYDICE , Key data on teaching languages at school in Europe, p.6

2006, more than half of the pupils in the EU were learning at least two foreign languages in secondary general education. According to Figure 15; in 15 countries, at least 2 languages are learnt by pupils in general secondary education. It is important to add that, there are 3 official languages in Luxemburg and Belgium. (See Annex IV)

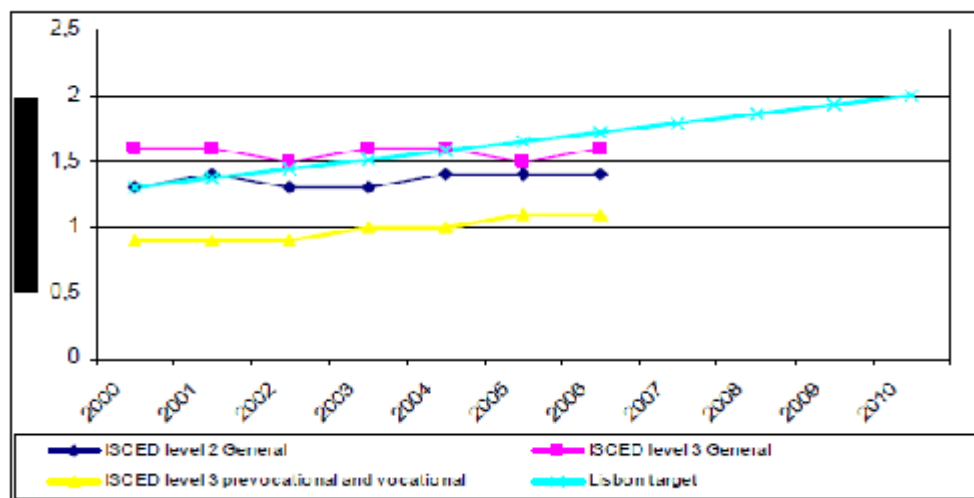
The average number of languages learned by pupils in secondary education is at the lowest levels in United Kingdom, Ireland and Turkey. There is no data for Turkey in lower secondary education in 2005/06 but for the upper secondary education, pupils learn, on average, 0.7 languages. 67.3% of pupils in Turkey learn English in secondary education, which is a low level when it is compared with most of the European Countries, which have more than 90% levels. Moreover, regarding the second language, it is really rare for pupils to learn a second foreign language in Turkey, as it is only 6.5% for German and 0.7% for French. (See Table 11)

Figure 15: Average number of foreign languages learnt per pupil in general secondary education (ISCED 2 and 3), 2005/06



Source: EUROSTAT & EURYDICE , Key data on teaching languages at school in Europe, p.68

Figure 16: Average number of foreign languages learned per pupil in EU (2000-2006)



Source: EC, Progress Report, p.103 (EUROSTAT)

2.4.6 ICT (Information and Communication Technology) Skills

There are significant differences in citizen's ICT skills between countries, even between the schools in the same country. Moreover, age and education level affect individuals' ICT skills; the young perform better than the old and well educated people perform better than less educated people. However, conditions are important in ICT skills; for example, students who access to a computer at school performs better than the students without accessing, according to PISA Survey. For sure, if there is more opportunity to use computer, internet or other technological vehicles, the people have opportunity to learn and have a potential to perform better than the people who don't have.

Most schools in most countries are in the early phase of ICT adaptation. It is considerably costly to achieve such a progress because equipment, connectivity, professional development and digital learning are needed. But what is the return of investment in ICT? "The ICT Impact Report"⁷⁶ shows that ICT investments have impacts on 2 major areas; learning and learners as well as teaching and teachers.

⁷⁶ European Schoolnet, **The ICT Impact Report**: A review of studies of ICT impact on schools in Europe, 11 Dec. 2006

Pupils are more motivated and attentive when computers and the internet are used in class. ICT affects educational performance of pupils positively and improves attainment levels of school children, especially in primary education. Moreover, ICT enhances independent learning and teamwork of pupils, because it allows greater differentiation by means of programmes that are tailored to individual pupils' needs which is especially important for pupils with special needs or behavioral difficulties. In addition, it allows students to work independently and effectively. Collaboration between students is greater when they use ICT for project work. From the teachers' side; ICT increases enthusiasm, efficiency and collaboration.

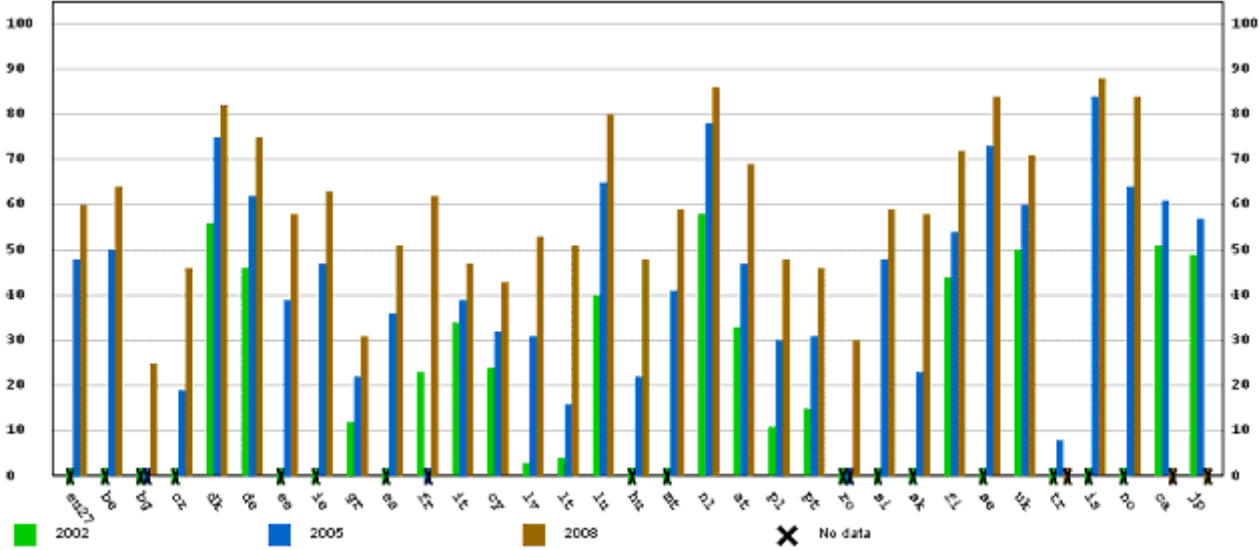
“The Global Information Technology Report”⁷⁷, which is a joint project between World Economic Forum and INSEAD (A business school) and which is published annually since 2001, is an important benchmarking tool to determine national ICT strengths and weaknesses, and to evaluate progress. The report shows the importance of ICT application and development for economic growth. Denmark, followed by Sweden, is the most networked economy in the world for the last three years. United States and Singapore have been in the leading positions in the rankings from the beginning. There are 7 European countries that are all Nordic countries and Netherlands in the top ten of “**The Networked Readiness Index 2008–2009 rankings.**” (See Annex V) Turkey took the 61th rank in the 2008-2009 rankings among 134 countries. Bulgaria and Poland, which took the 68th and 69th lines respectively in the list, are the worst countries within the EU Countries.

Computer and internet use affect the ICT skills. According to the internet access levels of households, there is a progress with respect to the prior years. Nordic countries, with the Netherlands and Luxemburg, are again the leaders as for the internet access at home. All of them, except Finland, have reached the levels more than 80%. Turkey has the smallest level at internet access within the European Countries, followed by Romania and Bulgaria. (See Figure 17)

⁷⁷ World Economic Forum & INSEAD, **Global Information Technology Report**

PISA also has scales about ICT skills that measure the levels of the use or confidence in computer and the internet. European countries have a relatively high degree of self confidence in the use of ICT when compared to other countries.

Figure 17: Households who have internet access at home
 Percentage of households with at least one member aged 16 to 74



Source: EUROSTAT

There are big differences in frequency of computer and internet use according to age and levels of education. Whereas 70% of individuals between the ages of 16-24 use computer everyday, it decreases to 20% for the age group of 55-74 in terms of EU averages. Moreover, 65% of individuals with higher education use internet everyday, which is around 20% of the individuals with lower education. In addition, men use computer and the internet more often than women. It is important to add that while Scandinavian countries have less difference between the young and the old as well as between high and low educated, the Eastern and Southern countries have higher differences regarding using computer.

2.4.7 Civic skills

Research in this field has been limited because how to measure civic competence and active citizenship is still complicated. Measuring Civic Competence is important for the development of active citizens in Europe and promotion of active citizenship has been considered to be a tool to improve democracy and social cohesion. It is the social cohesion element of the Lisbon strategy.⁷⁸ Civic competence is the knowledge, skills, attitudes and values needed to enable individuals to become an active citizen. Active citizenship was defined as: *“Participation in civil society, community and/or political life, characterized by mutual respect and non-violence and in accordance with human rights and democracy”*⁷⁹

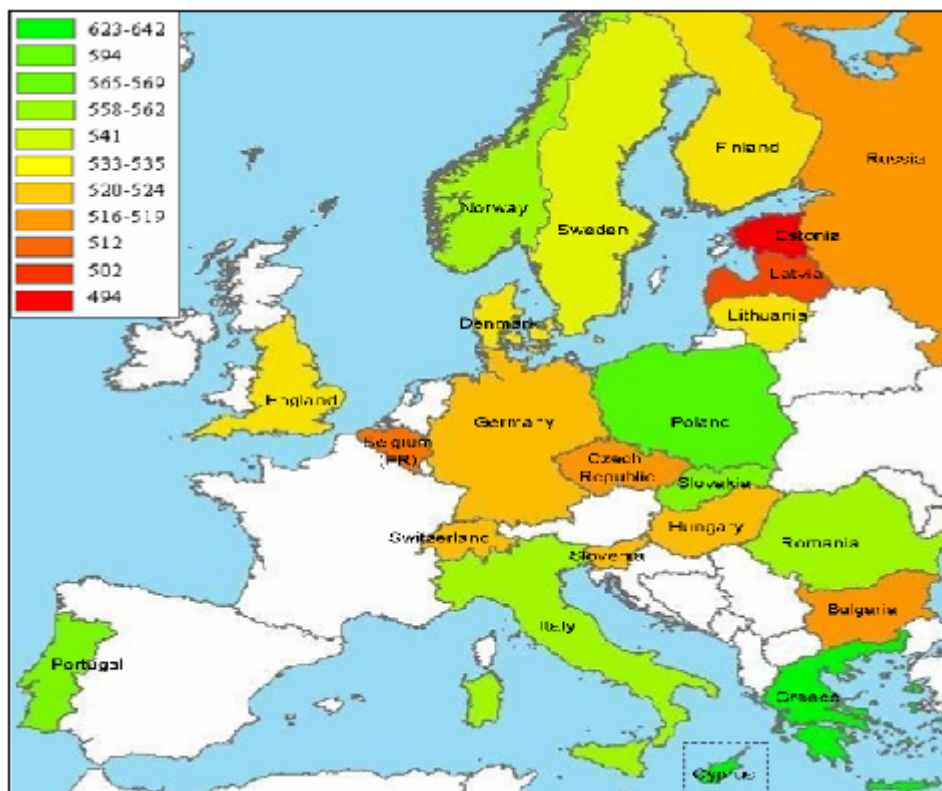
Four dimensions of civic competence was established by IEA Cived Data⁸⁰. These four dimensions are “Citizenship values, social justice (both values and attitudes), participatory attitudes and cognition about democratic institutions”. The IEA 1999 survey on civic education (Cived 1999) only represents the 14 years old students in school in the 28 participating countries, so it does not measure the adult population civic competence and the survey can not be interpreted in general.

⁷⁸ Bryony Hoskins, Ernesto Villalba, Daniel Van Nijlen, and Carolyn Barber, **Measuring Civic Competence in Europe-A composite Indicator based on IEA Civic Education Study 1999 for 14 years old in School**, JRC/CRELL Scientific and Technical Reports, 2008

⁷⁹ Hoskins, Villalba, Nijlen and Barber, p.11

⁸⁰ Civic Education Study conducted by IEA-International Association for the Evaluation of Educational Achievement

Figure 18: Civic Competence Composite Indicator in Europe



Source: IEA Civic Education Study, 1999, JRC/CRELL, p.43

Greece and South Cyprus took the highest rates according to overall results of civic competence Composite Indicator in Europe. Belgium (Fr), Latvia and Estonia are at the bottom of the ranking. Poland, Slovakia, Portugal, Norway and Italy also show good results. However, there is no fixed regional picture according to the four dimensions of civic competence. South and East Europe perform well while most north and west countries are low performers in the sense of participatory attitudes and citizenship values. Regarding to **citizenship values**, Greece and South Cyprus are the high performers. Romania, Lithuania, Slovakia, Poland and Portugal are also high performing countries in this domain. Northern and Western people perform worse than Finland, Belgium (Fr), Estonia, England and Denmark at the bottom of the ranking. The **participatory attitudes**' results are similar to the results of citizenship values; Greece, South Cyprus, Romania, Poland and Portugal show high performances, whereas Finland, Sweden and Czech Republic are at the lowest levels in the list. In the dimension of **Social Justice**; South Cyprus, Portugal, Norway, England and Poland are in the top five, while Hungary, Latvia and Bulgaria are in the bottom. According to the last dimension, "**Cognition about Democratic Institution**" dimension, South Cyprus

and Greece are again the top performers, followed by Finland, Poland and Slovakia. The Baltic countries, Lithuania, Latvia and Estonia with Romania are the bad performers.⁸¹

2.4.8 Learning to learn skills

Ability to learn is becoming one of the basic skills for the success in knowledge society. Citizens must learn to learn in order to maintain their participation in employment and civil society and to avoid the risk of social exclusion because technology is changing rapidly and so the social needs and the workplace are changing within the globalization context.

The EU Definition for learning to learn is as follows: *“Learning to learn’ is the ability to pursue and persist in learning, to organise one’s own learning, including through effective management of time and information, both individually and in groups. This competence includes awareness of one’s learning process and needs, identifying available opportunities, and the ability to overcome obstacles in order to learn successfully. This competence means gaining, processing and assimilating new knowledge and skill as well as seeking and making use of guidance...”*.⁸²

The Council Conclusions in 2005 included a request from Commission to present a detailed survey proposal for the development of indicators including learning to learn where no comparable data exist. Following this request, a European expert group developed a suitable framework model on learning to learn which based on three dimensions; Cognitive, Metacognition and Affective Dimensions. (See Table 12)

⁸¹ Bryony, Hoskins, **Measuring Civic Competence Across Europe: A Complex Picture**, Centre for Research on Lifelong Learning (CRELL) .ppt

⁸² Recommendation of the European Parliament and of the Council of 18 December 2006 on Key Competences for Lifelong Learning, 2006

Table 12: European test learning to learn

The affective dimension;
<ul style="list-style-type: none">• Learning motivation, learning strategies and orientation towards change• Academic self-concept and self-esteem• Learning environment
The cognitive dimension;
<ul style="list-style-type: none">• Identifying a proposition• Using rules• Testing rules and propositions• Using mental tools
Meta-cognition dimension;
<ul style="list-style-type: none">• problem solving (metacognitive) monitoring tasks,• metacognitive accuracy• metacognitive confidence

Source: JRC Scientific and Technical Reports

The European learning to learn test is a combination of several existing tests on this concept: the learning to learn project organized by the “University of Helsinki”, the test for cross-curricular skills developed by the “University of Amsterdam” and The Effective Lifelong Learning Inventory (ELLI) from the “University of Bristol”. In addition, the meta-cognitive dimension based on a Spanish test from “University of Madrid”. The test was prepiloted in 8 European countries, namely France, Italy, South Cyprus, Slovenia, Finland, Austria, Spain and Portugal in April-June 2008 and tested 2310 14 year old students in 49 schools across Europe.⁸³ The results showed that further developments were required on all dimensions of the test and even a further research is needed on learning to learn competence.

2.4.9 Upper secondary completion rates of young people

This indicator is also one of the five benchmarks for the achievement of Lisbon Education Objectives in EU and according to its aim at least 85% young people should have completed upper secondary education by 2010. On average, the upper secondary attainment

⁸³ Bryony Hoskins and Ulf Fredriksson, Learning to Learn: **What is it and can it be measured?**, JRC Scientific and Technical Reports, 2008, P.25-29

level of 20-24 aged young people was 78.1% in 2007 in Europe, which is still behind the benchmark. (See the section of “Five Lisbon Bechmarks”)

2.4.10 Professional development of teachers and trainers

The role and the functioning of schools, and as a result the expectations from teachers are changing. Teachers have to meet several challenges like effective use of information and communication technologies for teaching, teaching in multicultural classrooms, meeting the needs of the special education needs students and trying to make the parents involve in schools. For sure, it is not possible for teachers to meet all the challenges but through the professional development opportunities, high standards of teaching can be met. Professional development helps teachers through several aspects like updating their knowledge with the recent advances in their area, updating their skills, approaches and attitudes. Professional development also helps weaker teachers to be more effective or exchange information among their colleagues.

In May 2005, after the Council requested the Commission to satisfy the data needs on professional development of teachers with the cooperation of OECD; a group of EU experts created the data needs whose aspects were severally covered by OECD Survey: TALIS-The Teaching and Learning International Survey. One million from “Lifelong Learning Programme” budget was set aside to encourage EU countries to participate into the survey and 24 countries⁸⁴ committed to participate including Turkey.

Teaching and Learning International Survey focuses on the working conditions of teachers and the learning environment in schools and its aim is to fill the important information gaps in the international comparisons of education systems and is to help countries to review and develop policies that will foster the conditions for effective schooling. TALIS focuses on lower secondary education teachers and the principals of their schools.⁸⁵ It

⁸⁴ **OECD Countries:** Australia, Austria, Belgium (Flemish Community) , Denmark, Hungary, Iceland, Ireland, Italy, Korea, Mexico, Norway, Poland, Portugal, Slovak Republic, Spain, Turkey

Partner Countries: Brazil, Bulgaria, Estonia, Lithuania, Malaysia, Malta, Slovenia

(Netherlands’ data are not included in the international comparisons, because of the unsatisfied required sampling standards)

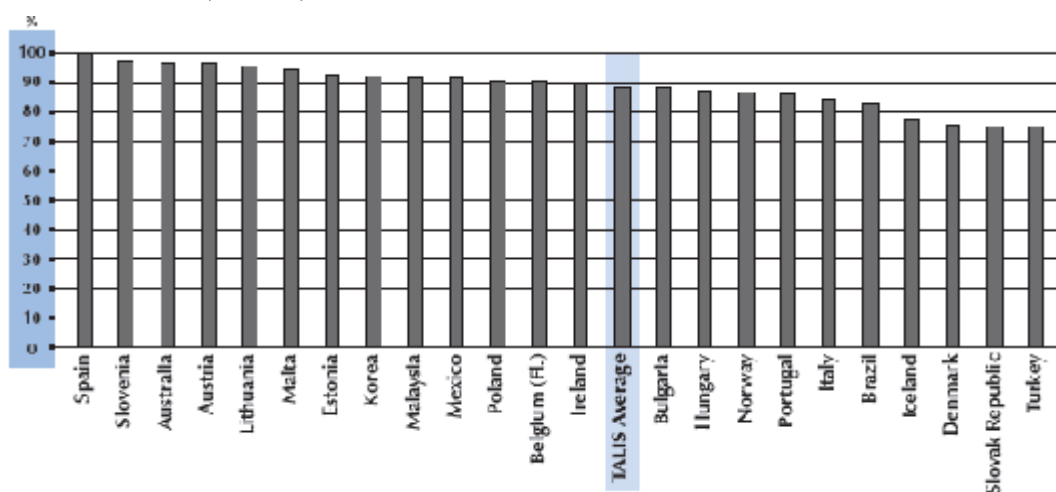
⁸⁵ OECD: Teaching And Learning International Survey, **Creating Effective Teaching and Learning Environments**, First Results from TALIS

defines the professional development of teachers as “*activities that develop an individual’s skills, knowledge, expertise and other characteristics as a teacher.*”⁸⁶

The first report of TALIS was published in June 2009, which was implemented in 2007-08. Teachers were asked about their professional development activities during the 18 months prior to the survey. These activities are; courses/workshops, education conferences or seminars, qualification programmes, observation visits to other schools, participation in a network of teachers for professional development reasons, individual or collaborative research on a topic of professional interest; and mentoring or peer observation and coaching.

The results of “Professional development of teachers” are discussed in the chapter 3 of TALIS Report. On average, 89% of teachers in lower secondary education engaged in professional development, that is they participated at least one day development in the previous 18 months. There are differences between countries. In Spain, all teachers have been involved in some participation whereas in Denmark, the Slovak Republic and Turkey, one quarter reported that they didn’t participate in any form of professional development. (See Figure 19)

Figure 19: Percentage of teachers who participated in some professional development in the previous 18 months (2007-08)



Source: OECD-TALIS, Table 3.1

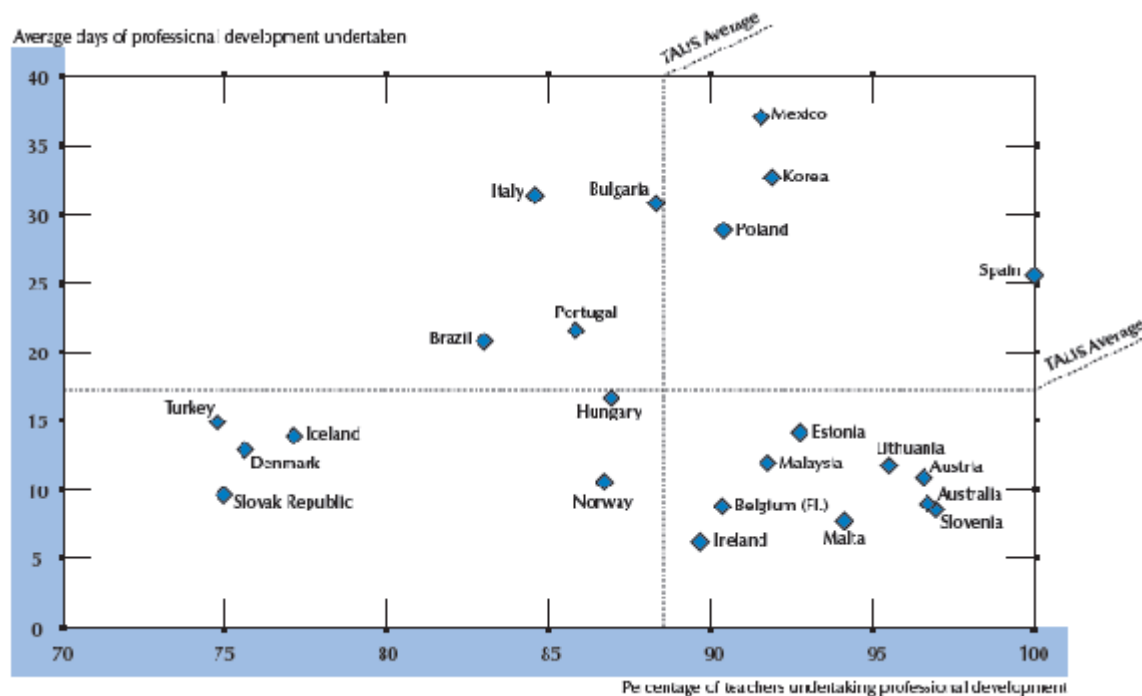
⁸⁶ OECD- First Results from TALIS, p.49

Intensity of participation in terms of the number of the days of professional development of teachers is on average 15.3 days in the 18 months prior to the survey, which is less than one day per month, but countries differ as in the case of participation levels. Among the EU countries, Bulgaria (27.2 days) and Italy (26,6 days) reported the highest number of days whereas Ireland (5.6 days), Slovak Republic (7.2) and Malta (7.3) reported the lowest number of days regarding the professional development. Within the 23 countries in the survey, Mexico and Korea showed the highest number of days that the lower secondary teachers participated in a professional development, which is more than 30 days in the previous 18 month.⁸⁷

Figure 20 shows the trade-off between participation and intensity levels of professional development. There are 4 parts in the figure. At the higher right hand part, the two EU countries Poland and Spain as well as Mexico and Korea showed both high participation and high intensity participation in professional development. However; Denmark, Iceland, Slovak Republic and Turkey, at the opposite side, reported not only low participation level but also low number of days in professional development. Teachers in Denmark and Turkey also reported the lowest level of need in professional development, which means that they did not need more professional development, differently from the teachers in other countries. Teachers in these two countries took the least participation and the least number of days in professional development, however they also reported the least professional development need.

⁸⁷ OECD, First Results from TALIS , Table 3.1 ,p.80

Figure 20: Comparison of the level and intensity of participation in professional development (2007-08)



Source: OECD, Table 3.1.

On average, there is no significant difference between female and male teachers across the countries that participated into the survey and the amount of professional development decreased with the age of the teacher. Teachers in public schools, females and under 40 years of age were more likely to report unfulfilled demand across countries. Moreover teachers with a Master’s degree or higher received more days of development than those with Bachelor’s degree or less. Briefly, in lots of the countries, the least qualified received least professional development.

More than half of teachers want more professional development than they received and a significant proportion reported that the professional development doesn’t meet their needs. The main reason for unsatisfied need of professional development is the conflict with their work schedule and the lack of suitable development opportunities. Lower secondary teachers who were involved in survey reported that “ Teaching special learning needs students” is the greatest development need area (almost one third) for them, followed by “ ICT teaching skills”(25%) and “Student discipline and behaviour” (21%) whereas only 10%

of teachers need development in the area of “School management and administration” .⁸⁸

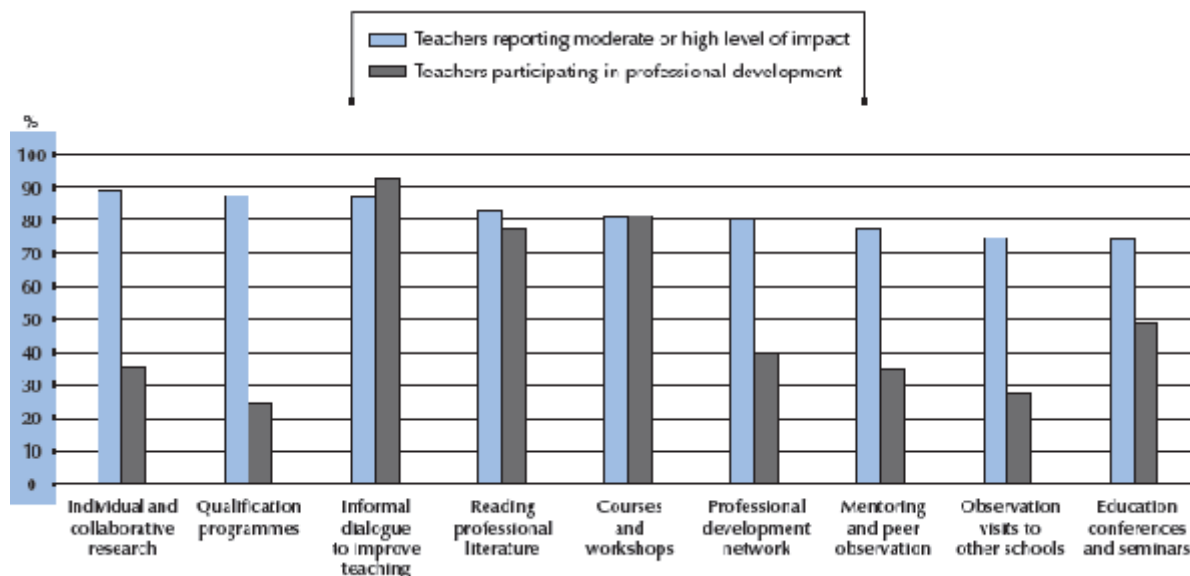
The degree and form of financial support for professional development in the countries is varied, but it is not completely free in any countries. Teachers in Malta, Slovenia and Turkey, paid about nothing for their professional development, as more than 80% of the costs have been paid. But the survey showed an interesting result that the teachers who had to pay some or all of the costs of their professional development, took the highest number of days of development and these teachers also reported unsatisfied demand which means they have a greater desire for professional development than those teachers who received free professional development.

TALIS asked teachers who wanted more professional development. The most common reasons that prevented the teachers from taking more development activities are “Conflict with work schedule” and “No suitable professional development”, followed by the reasons of “ Family responsibilities”, “ Too expensive”, “Lack of employer support” and “Didn’t have the pre-requisites”.

TALIS also asked teachers the impact of their professional development activities on their development as a teacher. The results indicated on average that 90% of teachers reported that professional development has a moderate or large impact on their development through “Individual and collaborative research”, “Informal dialogue to improve teaching” and “Qualification programmes”. On the other hand, the less effective forms of development were attendance at “Education conferences and seminars” and taking part in “Observation visits to other schools” (See Figure 21) . In addition, teachers who most likely to pay for and commit significant time to their development reported the highest impact on their development.

⁸⁸ OECD, First Results from TALIS, p.61

Figure 21: Comparison of impact and participation by types of development activity (2007-08)



Source: OECD-TALIS, Table 3.2 and 3.8, p. 75

2.4.11 Higher education graduates

The European Union goal of “Knowledge based Economy and Society” needs highly skilled, educated people. Therefore, tertiary⁸⁹ graduates is one of the indicators in order to measure the progress in Lisbon Education and Training Objectives.

There is a significant increase in the total number of students in tertiary education in Europe during the last decade. One of the important reasons for this increase is the Bologna Process which has an ultimate aim of “*create a European Higher Education Area (EHEA) based on international cooperation and academic exchange that is attractive to European students and staff as well as to students and staff from other parts of the world*”⁹⁰ by 2010.

Bologna Process was signed in 1999 in Bologna (Italy) by 29 European Countries in which today 46 countries are in the process in charge of higher education and is based

⁸⁹ “Tertiary Education” and ‘Higher Education’ are used synonymously in this thesis.

⁹⁰ The official Bologna Process website 2007-2010, <http://www.ond.vlaanderen.be/hogeronderwijs/bologna/about/>

on cooperation between ministries, representatives of higher education institutions, students, staff, employers as well as international organizations like UNESCO-CEPES.⁹¹ The aim of the reforms is to allow easier recognition of diplomas and increased student mobility. Turkey became involved in the process after 2 years in 19 May 2001 with Croatia and South Cyprus.

Bologna Process envisages Europe as a place where students, graduates and higher education staff of countries in the Higher Education Area will move easily. The Process also envisages Europe to be preferred by the citizens of other countries both for high education and for business opportunities.

There are 18 million students in tertiary education by 2007 in EU. This figure means 13 million more higher education graduates than in 2000 which corresponds an increase of 37%. In terms of number of tertiary students, Turkey showed the most increase and more than doubled its number of higher education students together with South Cyprus and Romania. (See Table 13) In terms of tertiary graduates; Czech Republic, Netherlands, Romania, Slovakia, Turkey and Iceland showed the highest performance that catches a more than 10% increase per year during the process of 2000 to 2006.

30% of population aged between 24-35 has a higher education degree in Europe and this proportion is 21% of the working age population. This percentage is more than 40% in Belgium, Denmark, Ireland, South Cyprus, France and Norway. (See the second part of the Table 13) In most European countries, female with higher education is more than the male percentages as for 24-35 years-old population. Only Turkey and Switzerland are the exceptions that the male percentage with higher education is more than female at the corresponding age.

The world high education student population has also increased to 138 million in 2005, which was 6.5 million in 1950. China tripled its tertiary students since 2000 and reached 23.4 million students in 2006. USA and EU are still the big producers of tertiary students today together with India, Russia and China, but EU-27 still have more tertiary graduates than all big economies.

⁹¹ UNESCO: United Nations Educational, Scientific and Cultural Organization, CEPES:European Centre for Higher Education

Table 13: Tertiary education students

	Number of students in Tertiary education(1000)			Percentage of population aged between 25-34 with tertiary education(%) – 2007		
	2000	2007	Growth Rate	All	Female	Male
EU-27	15920.8	18884.2	19	29.9	33.5	26.4
Belgium	355.7	393.7	11	41.3	47	35.8
Bulgaria	261.3	258.7	-1	24.9	32	18.2
Czech Republic	253.7	362.6	43	15.5	17	14
Denmark	189.2	232.2	23	40.1	44	36.2
Germany	2054.8	2278.9	11	22.6	23.4	21.8
Estonia	53.6	68.8	28	34.6	43	26.3
Ireland	160.6	190.3	18	43.9	50.4	37.5
Greece	422.3	602.9	43	27.1	30.1	24.2
Spain	1829.0	1777.5	-3	38.9	44	34.2
France	2015.3	2179.5	8	41.5	46.1	36.8
Italy	1770.0	2033.6	15	18.9	22.9	14.8
South South Cyprus	10.4	22.2	113	47	52.3	41.7
Latvia	91.2	129.5	42	26.3	32.7	20
Lithuania	121.9	199.9	64	38.9	45.3	32.6
Luxembourg	2.4	:		35.7	39.8	31.7
Hungary	307.1	431.6	41	22	26.2	17.9
Malta	6.3	9.8	56	22.5	25	20.1
Netherlands	487.6	590.1	21	36.7	39.3	34.1
Austria	261.2	261.0	0	18.9	19.2	18.6
Poland	1579.6	2146.9	36	30	35.9	24.2
Portugal	373.7	366.7	-2	21.4	27.8	15.1
Romania	452.6	928.2	105	16.6	17.7	15.6
Slovenia	83.8	115.9	38	30.1	40.3	20.4
Slovakia	135.9	218.0	60	17.5	19.9	15.1
Finland	270.2	309.2	14	39.3	47.9	31.1
Sweden	346.9	413.7	19	39.9	45.8	34.3
United Kingdom	2024.1	2362.8	17	37.9	39.4	36.3
Croatia	:	140.0		18.3	23.4	13.6
Turkey	1015.4	2453.7	142	12.9	11.1	14.8
Iceland	9.7	15.8	63	32.5	36.8	28.5
Liechtenstein	0.5	0.7	40	:	:	:
Norway	190.9	215.2	13	41.7	49.1	34.5
Switzerland	:	213.1		35	31	38.9
United States	13202.9	17758.9	35	:	:	:
Japan	3982.1	4032.6	1	:	:	:

Source: EUROSTAT

2.4.12 Cross-national mobility of students in higher education

Student mobility contributes to personal development and fulfillment, improving language and intercultural understanding as well as employability in international labour market.

Student mobility is not only a indicator for the progress of Lisbon Objectives, it is also a heart of Bologna Process aim. Bologna Process and Lisbon Strategy cannot be separated, it can be said that features and aims of Bologna Process are blended into Lisbon Education and Training Objectives.⁹² Student mobility is expected to make a major contribution to developing a European Higher Education Area, so national policies intended to encourage it. However, there are not enough national strategies on mobility, countries tend to promote incoming students mobility than the outgoing students'. EU Programmes like "Erasmus" and "Erasmus Mundus" are the main sources of support for student mobility.

Student mobility is measured by using the figures of incoming students and outgoing students for each country. The measurement considers the foreign students enrolled in tertiary education of host country by nationality (incoming students) and percentage of tertiary students from the country of origin enrolled abroad. However, measuring mobility by the nationality base sometimes leads to distortion of the statistics. One reason for this distortion is that permanent residents of foreign nationality may be counted as mobile students.

The United States received the 22% of foreign students and UK, Germany and France received 30% of foreign students from all over the world. Most EU citizens enrolled to another EU country. Doctoral Courses students (ISCED Level 6) are the most mobile students than the other tertiary students as well as in most countries male students are more mobile than the female students.⁹³

In 2007, 1.7 million foreign students enrolled into the tertiary education in EU-27 countries, which was 788 000 in 2000 that corresponds to an increase of 117% during the period between 2000-2007. In addition, 7.11% of all tertiary students are foreign students in

⁹² European Commission – Education and Culture DG, **Realising the European Higher Education Area - Achieving the Goals**, Conference of European Higher Education Ministers, Contribution of the European Commission, Bergen, 19/20 May 2005

⁹³ European Commission – Education and Culture DG, **Key data on Higher Education in Europe**, 2007 Edition

Europe, 3.1% of which is coming from other EU, EEA and candidate countries.(See Table 14) However, including the foreign students who may have lived in their all life in the country where they are studying in the data leads to overestimation of data. In addition, over 600 000 EU students study abroad and there is about 50% increase compared to 2000.

Table 14: Mobility of Tertiary Students

	Total foreign students in tertiary education (ISCED 5-6)		Foreign students as % of all students in tertiary education(ISCED 5-6		Outflow of tertiary students to another EU-27, EEA , Candidate country as % of all students		Inflow of tertiary students from EU-27, EEA and Candidate countries - as % of all students in the country	
	2000	2007	2000	2006	2000	2007	2000	2007
EU 27	"788533"	"1709775"		"7.11"	"2.1"	"2.8"	"2.4"	"3.1"
United States	"475169"		"3.60"		"_"	"_"	"_"	"_"
Japan	"59691"	"125877"	"1.50"	"3.19"	"_"	"_"	"_"	"_"
Turkey	"17654"	"19257"	"1.74"	"0.81"	"3.3"	"1.5"	"0.6"	"0.1"
Austria	"30382"	"43572"	"12.39"	"15.54"	"3.8"	"4.7"	"9.2"	"13.0"
Belgium	"38774"	"47218"		"10.30"	"2.4"	"2.6"	"6.6"	"8.1"
Bulgaria	"8117"	"9351"	"3.11"	"3.70"	"3.2"	"8.3"	"2.3"	"2.8"
Switzerland		"41058"		"19.23"				
South Cyprus	"2025"	"5973"	"19.44"	"27.35"	"46.5"	"56.9"	"4.0"	"5.1"
Czech Republic	"5698"	"24483"	"2.25"	"6.34"	"1.3"	"2.1"	"1.2"	"5.3"
Germany	"187033"	"258513"	"9.10"	"11.42"	"1.8"	"3.1"	"5.1"	"5.4"
Denmark	"12871"	"20851"	"6.80"	"8.35"	"2.7"	"2.5"	"2.6"	"4.9"
Estonia	"863"	"2200"	"1.61"	"3.15"	"2.5"	"4.5"	"1.3"	"1.2"
Spain	"25502"	"59814"	"1.39"	"2.85"	"1.1"	"1.4"	"0.4"	"0.9"
Finland	"5570"	"10066"	"2.06"	"2.90"	"3.2"	"2.9"	"0.8"	"1.2"
France	"137085"	"246612"		"11.24"	"1.8"	"2.5"	"2.0"	"2.3"
Greece		"21160"			"12.4"	"5.8"		"2.2"
Croatia		"940"		"0.55"		"6.2"		"0.1"
Hungary		"15110"	"3.24"	"3.30"	"1.7"	"1.8"		"2.2"
Ireland	"7413"	"16758"	"4.62"		"9.4"	"14.2"	"2.4"	"3.2"
Iceland	"403"	"783"	"4.17"	"4.55"	"16.9"	"17.8"	"3.2"	"3.7"
Italy	"24929"	"57271"	"1.41"	"2.40"	"1.7"	"1.8"	"0.7"	"0.9"
Liechtenstein	"0"	"487"		"89.94"		"51.0"		"64.2"
Lithuania	"539"	"1920"	"0.44"	"0.62"	"1.8"	"3.3"	"0.1"	"0.5"
Luxembourg					"74.5"		"24.5"	
Latvia	"5991"	"1433"	"6.57"	"1.09"	"1.3"	"2.5"	"0.4"	"0.5"
Malta	"351"	"607"	"5.64"	"7.15"	"8.2"	"9.9"	"1.7"	"2.1"
Netherlands	"14012"	"37815"	"2.87"	"6.18"	"1.9"	"2.1"	"1.6"	"4.3"
Norway	"8699"	"15618"	"4.56"	"6.66"	"4.7"	"5.0"	"2.0"	"2.7"
Poland	"6126"	"13021"	"0.39"	"0.53"	"0.9"	"1.8"	"0.1"	"0.2"
Portugal	"11177"	"17950"	"2.99"	"4.65"	"2.3"	"4.0"	"0.6"	"0.8"
Romania	"12591"	"12188"	"2.78"	"1.41"	"1.5"	"2.2"	"1.0"	"0.2"
Sweden	"25548"	"42769"	"7.37"	"9.80"	"2.7"	"3.0"	"4.2"	"5.0"
Slovenia	"778"	"1511"	"0.93"	"1.21"	"2.2"	"2.1"	"0.5"	"0.9"
Slovakia	"1570"	"2010"	"1.16"	"0.88"	"3.0"	"10.2"	"0.6"	"0.5"
United Kingdom	"222936"	"739599"	"11.01"	"17.91"	"0.6"	"0.7"	"5.9"	"9.0"

Source: EUROSTAT

Almost 118000 China students enrolled into tertiary education in Europe in 2007, nearly six times greater than 2000 data. Indian tertiary students also increased to 39000 in

2007, six times more than 2000 data. One reason for this increase is the restriction of Visa Policy of USA that was launched after 2001⁹⁴

Table 15: Mobility Of Erasmus Students,2006/2007

Community programmes like Erasmus account for the majority of mobility in Europe that about 1.7 million students have taken part in the Erasmus mobility since it started in 1987, currently at 3.2% increase per year.⁹⁵ In 2006/07 term, Erasmus accounted for student mobility that is 0.8% of the student population. More than 40 000 students participated in Erasmus Programme in 2006/07 in Spain, France and Germany. UK and Poland followed them in terms of students sent and received. However, according to Erasmus students to all students ratio (per 1000 students) Malta, Ireland, Finland, Sweden and Iceland received the most proportion in 2006/07; whereas Luxemburg, Czech Republic and Austria sent the most proportion of Erasmus students among the other EU countries.

	Students sent	Students received	Per 1000 students 2005/06	
	2006/07	2006/07	Students sent:	Students received
EU-27	153 396	155 070	8.2	8.3
Belgium	5119	5021	13.0	12.7
Bulgaria	938	296	3.9	1.2
Czech Rep.	5079	2012	15.1	0.3
Denmark	1537	4278	6.9	18.7
Germany	23004	16766	10.4	7.3
Estonia	572	460	8.4	6.7
Ireland	1524	3972	8.2	21.4
Greece	2465	1726	3.8	2.6
Spain	22322	27000	12.5	15.1
France	22931	20155	10.4	9.2
Italy	17195	14319	8.5	7.1
Cyprus	129	209	6.3	10.1
Latvia	807	330	6.2	2.5
Lithuania	2032	692	10.5	3.5
Luxembourg	170	24	03.0	0.9
Hungary	3028	1569	6.9	3.6
Malta	125	325	13.3	34.6
Netherlands	4502	6446	7.8	11.1
Austria	4032	3585	15.9	14.1
Poland	11219	3274	5.2	1.5
Portugal	4424	4586	12.0	12.5
Romania	3350	792	4.0	0.9
Slovenia	972	700	8.5	6.1
Slovakia	1346	610	6.8	3.1
Finland	3773	5860	12.2	19.0
Sweden	2532	7194	6.0	17.0
UK	7235	16153	3.2	7.1
Turkey	4438	1321	1.9	0.6
Iceland	189	327	12.0	20.8
Liechtenstein	44	31	73.3	51.7
Norway	1257	2575	5.9	12.0

Source: EC, DG Education and Culture

⁹⁴ EC, Progress Report 2008, p.81

⁹⁵ EC, Progress Report 2008, p.67

Table 16: Mobility of Erasmus Students by years

	1987/88	1989/90	1994/95	1999/00	2000/01	2002/03	2003/04	2004/05	2005/06	2006/07	Total
EU 27			72 311	108 418	109 933	122 777	131 190	141 391	149 333	153 398	1 503 951
Turkey	-	-	-	-	-	-	-	1142	2852	4438	8432
Iceland, Liechtenstein and Norway	-	-	1055	1248	1159	1120	1305	1504	1535	1490	12146
Total (EU 27 + EEA + CC)	3 241	19 458	73 407	107 666	111 092	123 957	135 586	144 037	154 421	159 324	1 683 928

Source: EC, Progress Report, p. 84

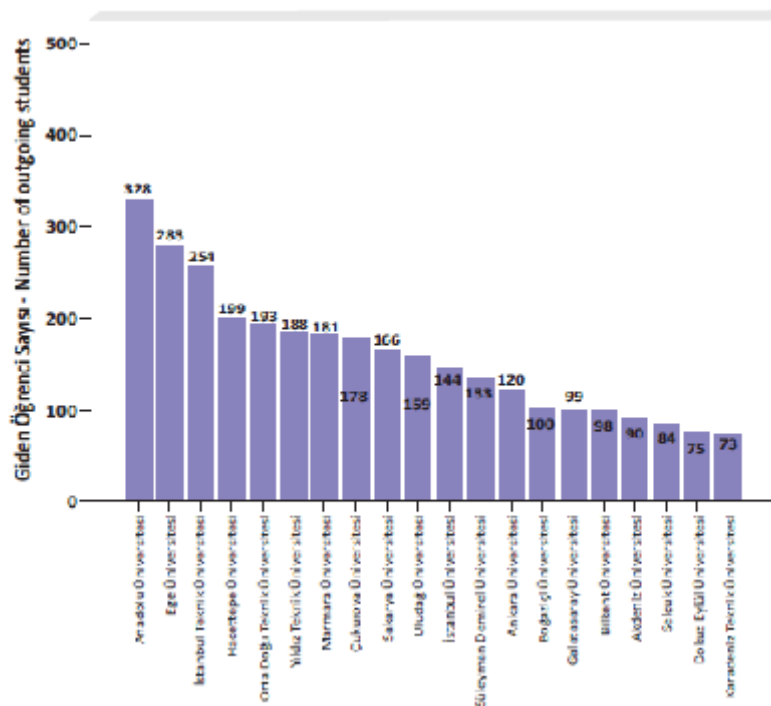
There are 37 588 Turkish citizens enrolled to tertiary education in EU 27 countries in 2007 which was 34 393 in 2000. The two third of Turkish students are studying in Germany and most of the other students are enrolled in United Kingdom, France, Austria and Bulgaria. There is no financial support for mobility in Turkey, Poland, Portugal and Greece in contrast to other European Countries. Turkish and Polish students are less mobile compared to the European Average and Greece is registering a fall in student mobility⁹⁶ After Croatia, Poland and Lithuania; Turkey and Slovakia received the least foreign students among the European Countries.

Turkey joined Erasmus Programme in 2004, and number of students going abroad by Erasmus Programme has doubled every year since the beginning. Anadolu University, Ege University and ITU are the top three universities that send the most students abroad in Erasmus Programme in the academic term of 2006/07.⁹⁷ (See Figure 22)

⁹⁶ EC, Key data on higher education, p.148

⁹⁷ Avrupa Birliği Eğitim ve Gençlik Programları Merkezi Başkanlığı, **2005/06 – 2006/07 Erasmus Programı - Değişim İstatistikleri**, AB Eğitim ve Gençlik Programları Kitapları Araştırma ve Raporlar Serisi 5, p. 63

Figure 22: The Top Universities according to outgoing students in Erasmus Programme in Turkey



Source: Turkey National Agency

2.4.13 Participation of adults in lifelong learning

Learning lasts throughout the life; it is not limited with age, place or time. Lifelong Learning is an important element to improve social inclusion, active citizenship and personal development, competitiveness and employability. On average, 9.7% of 25-64 year olds participated in lifelong learning in 2007. There is a progress since 2000, but it is slow and is still behind the 12.5% EU Benchmark. Participation in lifelong learning is at the highest levels for the citizens of Sweden, Norway, the United Kingdom, Denmark, and Iceland whereas it is at the lowest levels for the citizens of Romania and Bulgaria within the EU. Further information can be found in the “Five Lisbon Benchmarks” section in this paper.

2.4.14 Adult skills

Human capital is an important factor in the new world; so the skills, knowledge and competences of labor force are crucial to construct a new innovation-based society. An expert group, set by the Commission, concluded in 2007 that PIACC survey, which will be conducted by OECD can be used to measure adult skills such as numeracy, literacy, ICT skills and certain job-related skills of adults.

PIAAC (Programme for the International Assessment of Adult Competencies) will

“...assess the level and distribution of adult skills in a coherent and consistent way across countries. It will focus on the key cognitive and workplace skills that are required for successful participation in the economy and society of the 21st century...

...PIAAC will be an assessment of literacy in the information age, understood as the “interest, attitude and ability of individuals to appropriately use socio-cultural tools, including digital technology and communication tools, to access, manage, integrate and evaluate information, construct new knowledge, and communicate with others...”⁹⁸

PIAAC will allow an assessment of the performance of the education and training systems in developing basic cognitive skills and key generic work skills, and it will be a complementary of PISA Survey (Program for International Student Assessment), which is conducted by OECD every three years since 2000 and over 15 years old school students. It will give an overall picture of the proficiency of laborforce and the results will have an international comparative dimension. Four areas of competency; namely, problem solving in a technology-rich environment, reading literacy, numeracy, and mastering of the basic building blocks of literacy will be measured in the survey and the questions will cover generic work skills like computer use, communication, team working and management. PIACC will be conducted in 2011, and the results will be announced in 2013. In addition, 17 countries in Europe committed to participate in the development of PIAAC at present.⁹⁹

⁹⁸OECD, Programme for the International Assessment of Adult Competencies (PIAAC), http://www.oecd.org/document/35/0,3343,en_2649_201185_40277475_1_1_1_1.00.html

⁹⁹ Belgium, Czech Republic, Denmark, Estonia, Germany, France, Ireland, Italy, the Netherlands, Austria, Poland, Slovakia, Portugal, Finland, Sweden, the UK and Norway.

2.4.15 Educational attainment of the population

Increasing employment is one of the priorities of the Lisbon Strategy;. Especially after re-launching of the process in 2005, it became more important through the aim of “Growth and Jobs”. Improving employability-defined as the ability of getting employed, mostly depend on the improvement of individuals' education attainment when the required skills in a technology dependent and innovation-driven work environment are considered. Educational attainment level of working population aged between 15-64 represents the educational characteristics of labour force and provides a measure of the knowledge and skills available in each country.¹⁰⁰ Increasing high educational attainment means that more high skilled workers who are more capable of and adaptable to new technologies are available in the economy, which in turn increases the employability of these high skilled workers. Therefore, high educational attainment is used to measure the progress in employability. It is clear across the European countries that “The higher the educational attainment is, the higher the employment rates are”.¹⁰¹

Educational attainment level varies between countries. However, on average, 32.7% of working age population had a low level educational attainment while 46.7% had a medium and 20.6% had a high educational attainment level in EU in 2007. There is an increasing trend from low level to middle and high level attainments in the education attainment level of the countries as the low educational attainment decreased by 5.3%, while medium and high educational attainment increased by 1.7% and 3.6% respectively in EU (average) compared with the 2000 rates. The variations in the profile of educational attainment between generations explain this increase, as the old generations have been replaced with the young people with higher levels of formal education.

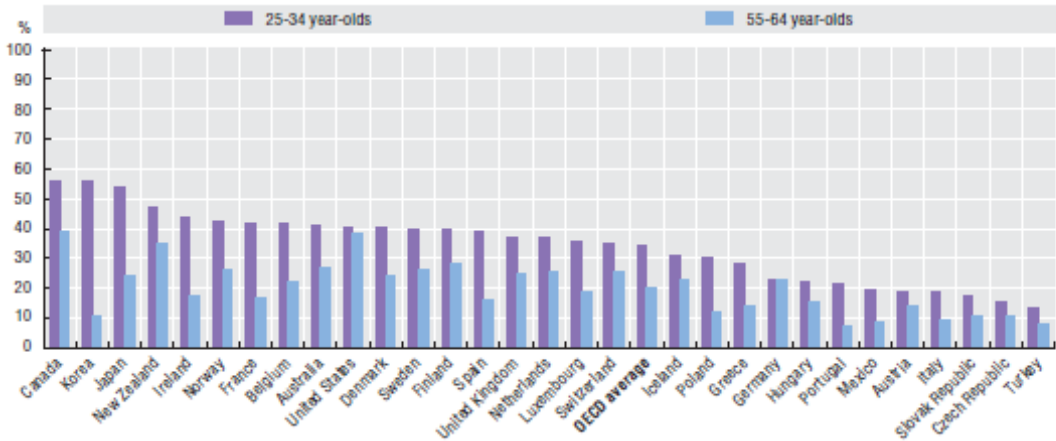
The Figure 23 shows the significant difference of 25-34 year-old generation and 55-64 year-old generation who have achieved the tertiary education. Almost in all countries younger adults have a higher educational attainment level than the older adults. It is important to add that there is no significant difference regarding the higher education

¹⁰⁰ EC, Progress Report 2008, p.149

¹⁰¹ EC, Progress Report 2008, p.152

attainment between the two age groups in the United States and Germany. In addition; Canada, Korea and Japan have more than 50% higher educational attainment levels in the age group of 25-34.

Figure 23: Tertiary education Attainment level by generations, 2007



Source: OECD , Education at a Glance 2009, Table A1.3a, available at <http://dx.doi.org/10.1787/664024334566>

There are big variations between countries in terms of different educational attainment levels. Regarding the low educational attainment levels; Czech Republic is the best performer and it has only 9% of below upper secondary attainment level as a percentage of the 25-64 year-old population, whereas Portugal and Turkey have a level more than 70%. (See Table 17)

In regards to the intermediate educational attainment level, more than 60% of working age population belongs to this group in Czech Republic, Slovakia, Poland, Austria, Germany and Hungary; while this proportion is less than 20% in Portugal and Turkey.

Nordic countries together with Ireland, Iceland, Belgium, Netherlands, Switzerland and UK reached high attainment levels of more than 30% in 2007. Ireland, which has increased its level of the 25-64 year-old population by 13% when compared to 2000 levels, shows the strongest growth at high attainment level among the EU Countries. Whereas in Italy, Czech Republic, Portugal Slovakia, Romania together with Turkey high educational

attainment levels are around 10% of working age population. Turkey and Mexico have the worst high educational attainment level among the OECD countries.

Table 17: Trends in educational attainment: 25-64 year-old population (2000-2007)

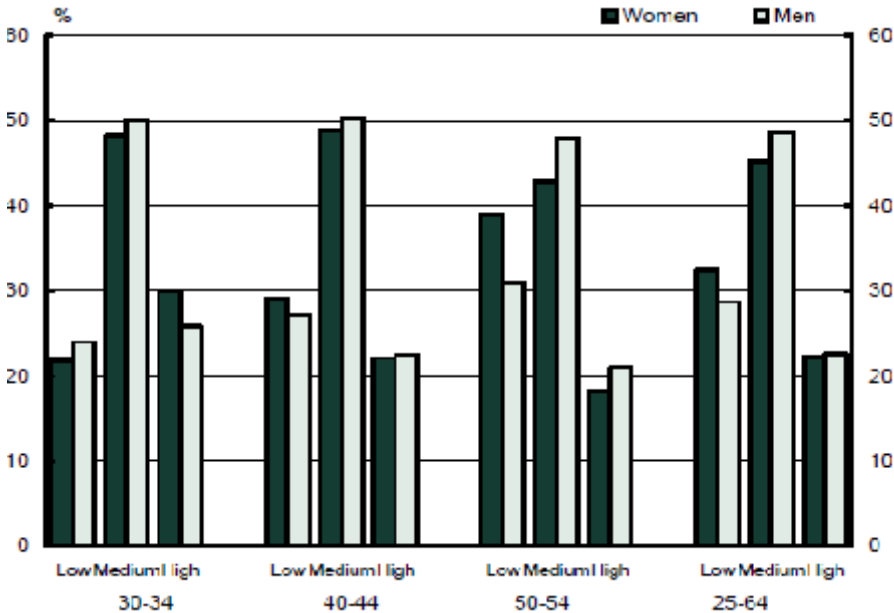
	Below upper secondary		Upper secondary and post-secondary and non-tertiary		Tertiary education	
	2000	2007	2000	2007	2000	2007
Australia	41	32	31	34	27	34
Austria	24	20	62	63	14	18
Belgium	41	32	31	36	27	32
Canada	19	13	41	38	40	48
Czech Republic	14	9	75	77	11	14
Denmark	21	25	52	43	26	32
Finland	27	19	41	44	32	36
France	37	31	41	42	22	27
Germany	18	16	58	60	23	24
Greece	51	40	31	37	18	23
Hungary	31	21	55	61	14	18
Iceland	45	35	32	35	23	30
Ireland	54	32	28	35	19	32
Italy	58	48	33	39	9	14
Japan	17	:	49	59	34	41
Korea	32	22	44	43	24	35
Luxembourg	44	34	38	39	18	27
Mexico	71	67	16	18	13	15
Netherlands	35	27	41	42	23	31
New Zealand	36	28	35	31	29	41
Norway	15	21	57	45	28	34
Poland	20	14	69	68	11	19
Portugal	81	73	11	14	9	14
Slovak Republic	16	13	73	73	10	14
Spain	62	49	16	22	23	29
Sweden	22	15	47	53	30	31
Switzerland	16	15	60	56	24	30
Turkey	77	71	15	18	8	11
United Kingdom	37	32	37	37	26	32
United States	13	12	51	48	36	40
OECD average	36	30	42	43	21	27
EU19 average	37	29	44	47	19	25
Brazil	:	63	:	27	:	10
Estonia	:	11	:	56	:	33
Israel	:	20	:	37	:	44

Source: OECD, Education at a Glance 2009, Table A1.4.

Finally, when the educational attainment level is analyzed as for gender, the overall distribution shows that the proportion of females with low educational attainment is still higher than that of men, whereas in the case of higher educational attainment, females have already overbalanced men in the young cohorts. In general, the younger the women are, the higher the level of their formal educational qualification is. Figure 24 shows the three levels

of educational attainment (ISCED Levels) in which ‘low’ refers to a basic education, ‘medium’ includes upper secondary education and ‘high’ refers to the tertiary education. The proportion of women with a high education in 2005 was only 18.5% in the 50-54 age group and 22.4% in the 40-44 age group. However, in the 30-34 age group this proportion increased to 30.9% , which is 3% higher than the men proportion in 2005.¹⁰²

Figure 24: Educational attainment by gender and age group in the EU-25, 2005 (% of women/men in each age group)



Source: Eurostat-Statistics in Focus: Population and Conditions, 2007, p.1¹⁰³

2.4.16 Investment in education and training

Improving investment in human resources is an essential condition for the success of Lisbon Strategy; high-educated, high-skilled people are the key factors to be competitive in a globalized and knowledge-based world.

Public sector is the main source for the education sector that accounted for the 84.7% (average) of the expenditure for all levels of education in OECD countries. This proportion

¹⁰² European Foundation for the Improvement of Living and Working Conditions : **Working in Europe: Gender differences**, 2008, p.3

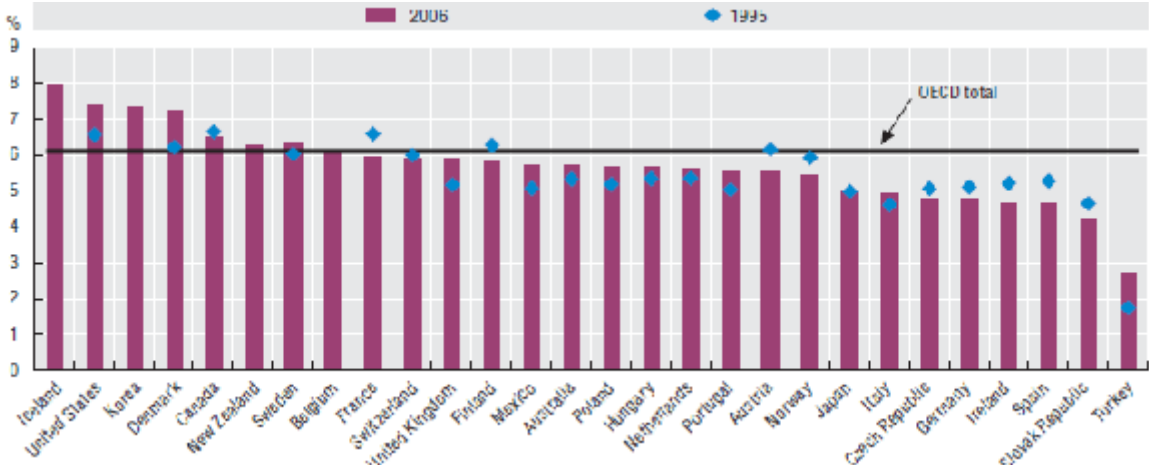
¹⁰³ Marta Beck-Domzalska, **The narrowing education gap between women and men**, Eurostat- Statistic in Focus: Population and Conditions, 2007

reaches to 90% in Europe. Public supports the education sector by means of direct investment to educational institutions, by subsidies to private companies or non-profit organizations for educational activities and by scholarships or loans for students.

Public spending on education as a percentage of total public spending shows the value that the countries place on education relative to other fields of public spending. In OECD countries, this proportion is on average 13.3% in 2003.¹⁰⁴ In EU levels, an average of 11% of public spending was devoted to education as well as 41% to social protection, 14% to general public services and 14% to health in 2004. (See Annex VI)

There are big variations between countries in regards of total education expenditure as a percentage of GDP, which shows how much national wealth is invested in education including the government, private and individual spendings on education. Iceland and Denmark devotes the highest proportion on education among the EU Member States, with more than 7% of their GDP. Denmark is followed by Sweden whereas this proportion is only 2.7% in Turkey. The OECD average is 6.1% and United States, Korea and Canada also devoted 7% of their national wealth to education. (see Figure 25 and See Annex VII)

Figure 25: Education expenditure as a percentage of GDP (1995, 2006)



Source: OECD -Education at a Glance 2009, Table B2.1, available at <http://dx.doi.org/10.1787/664243822887>.

¹⁰⁴ OECD, Highlights of Education at a Glance 2009, p.56

Education expenditure can be divided into two groups as the capital expenditure - like school buildings- and the current expenditure -like teacher salaries-. Salaries for teachers and other staff account for the most spending in education that the 80% of current education expenditure goes to staff costs in primary, secondary, post-secondary and non-tertiary education in OECD countries. Because of the higher cost of facilities and equipment in tertiary education, 32% of current expenditure belongs to purposes other than the staff salaries.¹⁰⁵

Tertiary education accounts for one-third of education spending when compared to other levels of education in OECD countries. It is nearly twice more than primary level spendings per student. More people are completing upper secondary and tertiary education than ever before, and this is accompanied by massive financial investments, which led to an average of 44% increase in the public and private investment in education during the years 1995 and 2006 in OECD countries. The increase is larger in tertiary education than the other levels of investment.¹⁰⁶

Private sources in education increased at all level of education in nearly all countries during the years 2000 and 2005, but the largest private funds go to tertiary institutions, followed by preprimary institutions. In the majority of countries private sources represents less than 10% of the total education investment and there are big variations between countries. In Sweden and Finland private sources account for only 2-3% of total investment in educational institutions while the amount is between 16-20% in United Kingdom, Germany, Slovakia and South Cyprus and 33% in US and 31% in Japan. In Turkey 7.4% of all investments in education are funded by private sources. (See Table 18)

¹⁰⁵ OECD, Highlights, Education at a Glance 2009, p. 62

¹⁰⁶ OECD, Education At a Glance 2009, p.209

Table 18: Private expenditure on educational institutions as a % of total educational expenditure in European countries

Expenditure on educational institutions (all levels of education) from private sources as a % of total public and private expenditure

	EU 27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	FI	CY	LV	LI	LU	HU
2000	11.2 e	7.9 i	14.7 i	10.1	4.0 i	18.8	:	7.0	5.2 i	12.0	8.8 i	9.1	34.9	11.1 i	:	:	11.7
2004	11.0 e	5.7 i	14.3	12.7	4.4 i	17.7	:	7.1	4.7	12.9	9.0	9.0	10.0	14.3	9.0	:	9.3
2005p	12.4 e	5.0 i	13.8	12.4	7.7	10.0	:	3.0	8.0	11.4	9.2	9.5	16.7	13.0	9.0	:	0.7
	MT	NL	AT	PL	PT	RO	SI	SK	PI	SE	UK	HR	MK	TR	IS	LI	NO
2000	10.3	9.3	5.0	:	1.4 i	0.0 i	:	3.8	2.0	3.0	14.0	:	:	1.4 i	0.8 i	:	1.0 i
2004	0.5	9.9 i	7.2	9.8 i	2.5 i	:	13.7	18.0 i	2.1	3.0	16.1	:	:	7.4 i	9.4 i	:	0.0 i
2005p	5.3	8.8 i	8.8 i	9.3 i	7.4 i	10.8 i	13.2	18.1 i	2.2	3.0	10.0	:	:	:	9.1 i	:	:

Source: Eurostat (UOE)

(:) Not available, (e) Estimated value, (i) See information notes, (p) Provisional data

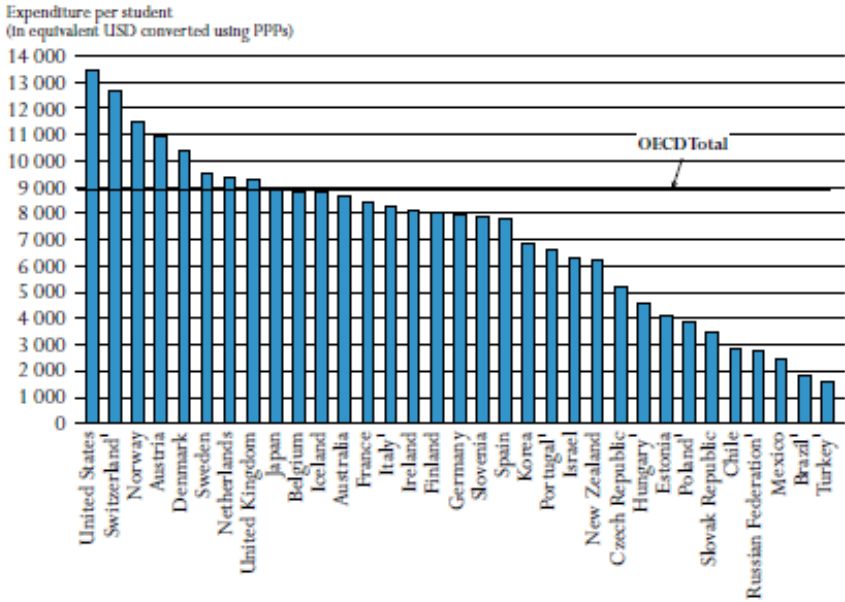
For additional country specific notes, see:

http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0.1136184.0_45572595&_dad=portal&_schema=PORTAL, p.163

At last, we will look at the investment for each student which is influenced by teachers' salaries, pension systems, teaching hours, the cost of teaching materials and facilities and the number of students enrolled in the education system. In all levels of education, OECD average for expenditure per student is 8857 USD annually from primary to tertiary education, USD 6 517 per primary student, USD 7 966 per secondary student and USD 15 791 per tertiary student.¹⁰⁷ However, like the other indicators of education expenditure levels, there are variations among the countries' spending levels. The level of expenditure per student is less than 3000 USD in Russia, Mexico, Brazil and Turkey while it is more than 10000 USD in the United States, Switzerland, Norway, Austria and Denmark.(See Figure 26)

¹⁰⁷ OECD, Education at a Glance, p.190

Figure 26: Annual expenditure on educational institutions per student in primary through tertiary education (2006)



Source: OECD, Education at a Glance 2009, Table B1.1a.

1. Public institutions only.

Results: Performance of Countries according to Sixteen Core Indicators

In conclusion, 16 core indicators have been adopted by Education Council Meeting in 2007 in order to follow-up the progress towards Lisbon Objectives in the area of education and training. There are significant variations among countries in terms of these 16 core indicators.

Participation in pre-school education: On average, 88.6% of 4 year-old children in Europe participated in pre-primary and primary education in 2007. %100 of 4 year-old pupils in France, Italy, Belgium and Sweden participate in pre-school education whereas this early childhood enrollment rate is almost below 50% in Ireland, Poland, Croatia, Macedonia and Turkey.

Special needs education: Special needs education is the education for children who may be included in handicapped categories and need an additional support in order to attend an

efficient and effective learning. It is accepted that the children who need special education should be educated in the regular system instead of the separated special institutions. There are big differences between countries regarding the percentages of pupils who have special education needs. Since the definition and the criteria of the special education needs vary between countries, the comparisons of the population proportions can be deceptive.. However, on average, 6% of the pupils in the compulsory education have some form of special educational needs, and 2% of special education needing pupils in Europe continue their education in segregated settings.

OECD separates the special needs data in 3 categories: Disabilities, Difficulties, and Disadvantages. Special classes and schools are more common for “Disabilities” category pupils in Belgium, the Czech Republic, Germany, the Slovak Republic and the Netherlands. They are common for the “Difficulties” category in Belgium, Netherlands and Germany. On the other hand, a big proportion of the pupils in these categories is integrated into regular system in United Kingdom and Spain, and all of these pupils in Canada are integrated into the regular system.

Early school leavers: Early school leavers indicator is also included in the Five Lisbon Benchmarks. On average, 14.8 % of young people between the age of 18 to 24 leave education after lower secondary education or less and don't attend any form of education and training in Europe. This proportion is behind the objective but the percentage of early school leavers decreased during the period 2000-2007 in the majority of countries.

Literacy in reading, mathematics and science: According to OECD PISA Survey, on average, low achievers in reading literacy is 24.1% in EU-27 while the targeted level was 17% for 2010 and it got worse during the period of 2000 and 2006. Regarding the low performers in mathematics, the EU average is 21.2% and in science area, the average proportion of low performers is 20.2% in EU. In three literacy skills, Finland, Estonia and Netherlands show the highest performances whereas Bulgaria, Romania and Turkey have the worse results among the European Countries. In reading literacy, females perform better than the males while in math area boys outperform girls, but there is no significant gender difference in science literacy in the most OECD Countries

Language skills: Learning a foreign language is important for mediation and intercultural understanding. There are 20 official languages in European Union. It is obligatory to learn at least one foreign language in compulsory education in all member states except Ireland and Scotland. English is the most widely thought foreign language in general secondary education in most countries in Europe. The percentage of pupils learning English has been increasing and on average it reached to 85.7% in 2006, but the statistics do not measure the proficiency level in foreign language. All pupils learn English in Denmark, Malta, Sweden, Czech Republic and Netherlands. In 15 countries, the pupils learn at least two foreign languages. The average numbers of the foreign languages learned by pupils in secondary education is at the lowest levels in the United Kingdom, Ireland and Turkey.

ICT (Information and Communication Technology) Skills: Since progress can be achieved in ICT costly, most schools in most countries are in the early phase of ICT adaptation. ICT investments affect two major areas: learning/learners and teaching/teachers. From the learners side, ICT improves the educational performance of pupils and improves the attainment levels of school children, especially in primary education. ICT enhances independent learning, teamwork of pupils, collaboration between students and it allows students to work independently and effectively. From the teachers perspective; ICT increases enthusiasm, efficiency and collaboration.

Age and education level affects individuals' ICT skills; the young perform better than the old, and well educated people perform better. Moreover, men use computer and the internet more often than women. There are significant variations between countries. All Nordic Countries and Netherlands are the most networked economies in the world, while Bulgaria and Poland are the worst within the EU countries together with Turkey. In terms of the internet access levels of households, Nordic countries with the Netherlands and Luxemburg are again the leaders whereas Turkey, Romania and Bulgaria are in the lowest levels. According to PISA Survey, European Countries have a high degree of self confidence in the use of ICT.

Civic skills: Measuring civic skills is important for the development of active citizenship, which improves democracy and social cohesion. However, researches are limited in this field since measuring the civic competence and active citizenship is complicated. Citizenship

values, social justice, participatory attitudes and cognition about democratic institutions are the four dimensions of civic competence. There is no specific regional picture according to 4 dimensions of civic competence. Greece and South Cyprus have the highest rates while Belgium(Fr), Latvia and Estonia are at the bottom according to overall results of civic competence Composite Indicator in Europe, which only represents the 14 year-old students in school, and does not measure the civic competence of the adult population.

Learning to learn skills: Ability to learn is important for citizens in order to maintain their participation in employment and civil society as well as to avoid the risk of social exclusion because of the rapid changes in technology, social needs and the workplace; hence learning to learn is becoming one of the basic skills for success in the knowledge society. Following the Council Request of a detailed survey proposal, an expert group developed a framework model for learning to learn that was based on cognition, metacognition and affective dimensions. The test was prepiloted over 14 year-old students in 8 European countries but the results showed that further developments and even further research were required in all dimensions of learning to learn skills.

Upper secondary completion rates of young people: This indicator is also a benchmark of Lisbon Objectives in Education and Training area. On average, the upper secondary attainment level of the 20-24 aged young people was 78.1% in EU in 2007, which is still behind the 85% benchmark by 2010.

Professional development of teachers and trainers: Teachers have to overcome several challenges of today like the effective use of information and communication technologies for teaching, teaching in multicultural classrooms or meeting the needs of the special education needs students. These challenges can be overcome by means of professional development which is the activities that develop an individual's skills, knowledge, expertise and other characteristics as a teacher. According to TALIS - The Teaching and Learning International Survey by OECD, on average, 89% of teachers in lower secondary education were engaged in professional development for at least one day in the previous 18 months. Regarding the intensity of participation, teachers participated in a professional development on average 15.3 days in the 18 months prior to the survey, which is less than one day per month.

There are variations between countries as Poland and Spain show both high participation and high intensity of participation in professional development, whereas it is the opposite in Denmark, Iceland, Slovak Republic and Turkey, which perform both a low participation level and a low number of days in professional development. On average, there is no significant difference between female and male teachers. The amount of professional development decreases with the age of the teacher. In addition, teachers with further higher education (master's or more) receive more professional development than the others. More than half of the teachers want more professional development than they receive and a significant proportion report that the professional development doesn't meet their needs because of the conflict with their work schedule and the lack of suitable development opportunities. Teachers who have to pay for their professional development, take the highest number of days of development and have a greater desire for professional development than those teachers who receive free professional development. On average, 80% of the teachers report that professional development has a moderate or large impact on their development as a teacher. Moreover, teachers who are most likely to pay for and spend significant time to their development report the highest impact on their development as a teacher.

Higher education graduates: There is a substantial increase in the total number of students in tertiary education in Europe during the last 10 years through the launching of Bologna Process in 1999 which has an aim of creating a European Higher Education Area that allows easier recognition of diplomas, and increases the international cooperation and academic exchange of students and staff within the area as well as making Europe attractive and preferred both for high education and for business opportunities. There are 18 million higher education graduates in Europe, which is 13 million more than the numbers in 2000 and 30% of the population between 24-35 ages has a higher education degree. This percentage is more than 40% in Belgium, Denmark, Ireland, France and Norway. The percentage of females with higher education is more than the males in most European countries. Higher education student population has also increased throughout the world in the last decades, reaching to 138 million in 2005. Besides, US, EU together with India, Russia and China are the big producers of tertiary students today.

Cross-national mobility of students in higher education: Improving language and intercultural understanding, student mobility contributes to personal development and fulfillment. It also increases employability in international labour market. There are not enough national strategies on mobility. The community programmes like Erasmus account for the majority of mobility in Europe. 7.11% of all tertiary students in Europe are foreign students, and 3.1% of the students come from other EU, EEA and candidate countries. In 2007, 1.7 million foreign students enrolled in to the tertiary education in EU-27 countries. The United Kingdom received the most number of foreign students (18%) among the EU countries, followed by Austria, Switzerland, France and Germany. Most EU citizens got enrolled to another EU country and Doctoral Courses students are more mobile than the other tertiary students. In most countries male students are more mobile than the female students. All over the world, The United States (22%) received the most of the foreign students.

Participation of adults in lifelong learning: This indicator is also a benchmark for Lisbon Education and Training Objectives. On average, 9.7% of 25-64 year-olds participated in lifelong learning in 2007, which is still behind the 12.5% EU Benchmark for 2010. Lifelong learning has become a reality for the citizens of Scandinavian Countries and UK.

Adult skills: Skills, knowledge and competences of labor force is important to construct a new innovation-based society. PIACC (Programme for the International Assessment of Adult Competencies) survey, which will be conducted in 2011 by OECD, will give an overall picture of the proficiency of laborforce as well as allowing an assessment of the performance of the education and training systems in developing basic cognitive skills and key generic work skills. Commission concluded that PIACC survey can be used to measure adult skills like numeracy, literacy, ICT skills and certain job-related skills of adults.

Educational attainment of the population: Educational attainment level of the working population aged between 15-64 represents the educational characteristics of labour force and provides a measurement for the knowledge and skills available in each country. Increasing high educational attainment improves employability. On average, 32.7% of the working age population had a low level of educational attainment while 46.7% had a medium and 20.6% had a high educational attainment in 2007. There are variations between countries, but there is an increasing trend in the education attainment level in countries. Almost in all countries,

younger adults have a higher educational attainment level than the older adults. The number of the females with low educational attainment is higher than that of men; whereas in terms of high educational attainment, females have already overbalanced men in the young cohorts.

Investment in education and training: Public sector is the main source of the education sector. On average 84.7% of the educational expenditure in OECD countries, and 90% in Europe is covered by public. In addition, private sources in education have increased at all levels of education -especially in tertiary and pre-primary levels- in nearly all countries. There is an increase of 44% in the public and private investments in education between the years 1995 and 2006 in OECD countries, and one-third of the spending on education goes to the tertiary education. Teacher and staff salaries account for the majority of the spending in education. On average, the public spending on education is 11% as a percentage of the total public spending in EU, and 13.3% in OECD. These figures show how much value the countries place on education relative to other fields of public spending. .Regarding the total education expenditure as a percentage of GDP, which shows how much national wealth is invested in education, OECD average is 6.1%. However, like in the other indicators, there are huge variations among countries. For example, while Iceland, Denmark, the United States and Korea devoted 7% of their national wealth to education, Turkey devoted only 2.7%. In addition, in terms of the investment for each student, OECD average is 8857 USD while the average investment is more than 12 000 USD in the US and Switzerland and less than 2000 USD in Brazil and Turkey.

All in all, Nordic Countries are the best performers in the field of education among the European Countries, and even in the world. The citizens of these countries have high income levels. The most educated people also have the highest standards of living, high quality of life and health. On the other hand, core education indicators show that EU's newcomers, Central and Eastern European Countries have significant gaps in the field of education when compared to EU averages. Romania and Bulgaria are the worst performers among EU countries, but as an exception Czech Republic has high performances in some areas in the education and training.

The performance of Turkey as for the participation in pre-school education is at the lowest level among European countries. The enrollment rate of 4 year-old children in

education was realized as 10.1% in 2007 in Turkey while this rate was 86.8% for EU Average. However, a pilot project started at the beginning of 2009-2010 educational year with an ultimate aim of making pre-school education compulsory in Turkey. Regarding the special education needs, it is hard to compare countries but there is a trend towards the inclusion of the “Disabilities” pupils in the regular schools, and almost half of these pupils are attending special classes or schools in Turkey.

Turkey has the highest percentage in the early school leavers as it is 47.6%, which means one of two young people aged between 18-24 leave the education after compulsory education without attending any education and training program further, while the EU Average in this field is 14.8%. In reading, math and science literacy area, Turkey together with Bulgaria and Romania are the worst performer countries among European Countries. Low achievers in reading literacy is 32.2% while EU average is 24.1%; this proportion in math area is 52.2% while EU average is 21.2%; and in Science area, it is 50.2% while EU average is 20.2%. These figures demonstrate that more than half of the pupils have a low performance in Math and Science in Turkey.

In Turkey language learning performance is at the lowest levels among European Countries as only 0.7 language is learned by pupils in Turkey while EU average is 1.6. Besides, 67.3% of the pupils learn English in the secondary education in Turkey while this rate is 85.7% for EU-27. It is really rare for pupils to learn a second foreign language in Turkey. Regarding the ICT skills, Turkey shows a low performance ranking as the 61th networked country within the 134 countries. The internet access level of households is relatively low compared to other EU countries. There is no available data for an international comparison in the context of civic and learning to learn skills in Turkey.

In the context of the uppersecondary attainment level of young people, Turkey has the lowest attainment level within the European Countries, which was 46.4% in 2007, while EU average was 78.1%. However, there is a progress and the level has increased since 2000. (38.6%) In the case of professional development of teachers and trainers indicator, according to OECD- TALIS Report, teachers in Turkey reported a low participation level and also low number of days in professional development even though they paid about nothing for their

professional development. On the other hand, they also reported the lowest level of need in professional development compared to OECD average.

In higher education graduates, Turkey caught an increase of more than 10% per year during the process of 2000 to 2006 in terms of tertiary graduates. 12.9% of the population between the ages of 25-34 has a tertiary education, but this rate still much lower than the EU average (30%). Higher educated males (14.8%) are more than females (11.1%) in Turkey and Switzerland at 25-34 ages, which is a situation different from the other European Countries. Regarding the cross-national mobility of students in higher education, the two third of Turkish students are studying in Germany. There is no financial support for mobility in Turkey. Turkish and Polish students are less mobile, and Turkey received less foreign students compared to the European Averages. However, Turkey joined the Erasmus Programme in 2004 and the number of the students going abroad by this programme has doubled every year since the beginning.

Policy adaptations are needed as for the concept of lifelong learning as Turkey has the lowest Lifelong Learning participation rate after Bulgaria and Romania. The lifelong learning participation rate for Turkey was realized with a rate of 1.5% in 2007 while the rate is 9.7% for the EU average. There is no data related to adult skills for international comparison. Besides, Turkey has not committed to participate in the PIACC Survey in 2011, which will be used to measure adult skills.

Educational attainment level has been increasing in Turkey, but 71% of the working population aged between 15-64 has a low level educational attainment, which is the second highest rate after Portugal. 18% of the working population aged between 15-64 has a medium and 11% has a high educational attainment in Turkey. Turkey and Mexico are the countries that have the worst level as for the educational attainment among the OECD countries. Regarding the investment in education and training, Turkey is the worst among the OECD countries regarding the total education expenditure as a percentage of GDP, as it is only 2.7%, less than the half of the OECD average. In terms of the investment in each student, Turkey's investment is less than one quarter of OECD average. Private sources in education have also increased in Turkey as the 7.4% of all investments in education are funded by private sources.

All in all, performances of Turkey are in the lowest levels according to almost all indicators in the field of Education and Training when compared to other European and OECD Countries.(See Table 19) When considering the importance of knowledge; investing in human capital, hence education is now crucial in order to be competitive and strong in the today's world. Therefore, for the strength and well being of our society in the knowledge-based world; national policies should be adopted in the education area in order to overcome the deficiencies, increase the investment in education and catch the EU and US levels.

Table 19: Turkey and EU Comparion according to Lisbon Benchmarks and Indicators in Education & Training

LISBON BENCHMARKS	TURKEY	EU-AVERAGE	YEAR
Early School Leavers (No more than %10)	47.6 %	14.8 %	2007
Low achievers in reading (17% by 2010)	32.2 %	24.1 %	2006
Completion of Upper Secondary Education (at least 85% young people)	46.4 %	78.1 %	2007
Mathematics, Science and Technology Graduates (Increase of at least 15%) (per 1000 habitants aged 20-29)	6.2 graduates	13 graduates	2006
Lifelong learning participation (12.5% by 2010)	1.5 %	9.7 %	2007
LISBON INDICATORS			
Participation in pre-school education	10.1 %	88.6 %	2007
Literacy in reading, mathematics and science			
Low achievers in Reading Literacy	32.2 %	24.1 %	2006
Low achievers in Math	52 %	21.2 %	2006
Low achievers in Science	50.2 %	20.2 %	2006
Language skills			
Number of foreign language	0,7	1,3	
English Learning	67.3 %	85.7 %	2006
ICT skills			
Internet access at home	20 %	54 %	2007
Upper secondary completion rates of young people (attainment level)	46.4 %	78.1 %	2007
Professional development of teachers and trainers			
Percentage of teachers who undertook professional development in the previous 18 months	74.8 %	89 % ¹	2007- 2008
Average days of professional development	11.2 days	15.3 days	2007
Higher education graduates			
Percentage of population aged between 25-34 with tertiary education	12.9 %	29.9 %	2007
Cross-national mobility of students in higher education			
Foreign students as % of all students in tertiary education	0.81 %	7.11 %	2006
Educational attainment of the population			
Low level educational attainment	71 %	32.7 %	2007
Medium level educational attainment	18 %	46.7 %	2007
High level educational attainment	11 %	20.6 %	2007
Investment in education and training			
Public spending on education as a percentage of total public spending	0,11	:	
Total education expenditure as a percentage of GDP	2.7 %	6.1 % ¹	2006
Private sources in education	11.6 %	7.4 %	
Investment in each student	1 614 USD	8 857 USD ¹	2006

Source: EUROSTAT and OECD Database

¹ OECD average

(:) No data available

METHOD

This part of the paper focuses on the research method which was employed in this study. This study has a qualitative design. Data are based on document analysis in this study.

3.1 Instruments

Documents are the main source of data of this thesis. These documents are primarily based on EU, OECD, UNESCO publications and academic papers. European Commission Staff Working Document: “Progress Towards the Lisbon Objectives in Education and Training” and OECD: Education at a Glance” documents, which are published every year, are the most referenced documents in this study. Besides, European Union Commission Papers, Council Conclusions and Parliament Reports; publications, data and surveys of European Union’s associate institutions are used. These associate institutions are EUROSTAT (European Statistics), EURYDICE (Network on Education Systems and Policies in Europe, and CRELL (The Centre for Research on Lifelong Learning). Moreover, OECD’s data and surveys like PISA (Programme for International Student Assessment), TALIS (Teaching and Learning International Survey), and PIAAC (Programme for the International of Adult Competencies) were referenced in the relevant Education indicator section in the study. The documents: ICT Impact Report of European Schoolnet (a network of 31 Ministries of Education in Europe and beyond) and “Global Information Technology Report of World Economic Forum&INSEAD (Business school) were used as data for “ICT Skills” indicator.

Thesis of State Planning Organization, academic papers, surveys and data were primarily used while analyzing the social and economic benefits of education and the relationship between education and economic growth. In addition, websites of OECD, EU Institutions and agencies, DPT (State Planning Organization), Turkish National Agency and IKV (Economic Development Foundation) were also used frequently. Comparison of countries according to benchmarks and indicators in education and training area were made through the data and surveys collected from the mentioned documents.

3.2 Data Analysis

This study is based on document analysis. The primary documents were collected during 2008-2009 academic year and the analysis of these documents was conducted in 2009-2010 academic year.

GENERAL DISCUSSION OF THE RESULTS AND THE CONCLUSION

This thesis aimed to analyze the progress and performance of European Countries in Education and Training area according to Lisbon benchmarks and indicators. It also attempted to explore the social and economic benefits of education as well as the role of education in growth. The research questions: “(1)What are the reported social and economic benefits of the education?, (2) Is there any documented relationship between education and economic growth?, (3)(a)What is the Lisbon Strategy, (b)What are its main objectives and pillars, (c)How does it progress?, (4) (a)What are the Education&Training Objectives of the Lisbon Strategy, (b)What are the benchmarks and indicators that are required in order to analyze the progress and make a comparison between countries towards these goals?, and (5) What are the compared results of countries’ performance and progress according to Lisbon Education and Training benchmarks and indicators?” were tried to be answered.

First of all, the reported relation between education and economic growth has been investigated. New economic growth theories consider the human capital as a critical source behind the economic growth, instead of the classical production factors, which are labor, capital and land. Education is the main dimension of the human capital, that is the answer of why new theories of growth define the education as an engine for economic growth. Many empirical studies showed that education - measured by different variables like educational level, education expenditures, education investments and schooling rates in all levels - has a positive and significant long-term effect on economic growth, which is measured by GDP growth (per capita, or output per worker). Particularly, educational level of the laborforce and the educational investments showed higher impacts on economic growth in the studies.

Secondly, a document review has been made for the question about the social and economic benefits of the education. The results indicated that the most obvious economic benefit of education is higher earnings of people with higher levels of education. When higher education costs are overbalanced by higher earnings, this gives individuals a strong incentive to invest in further education. According to OECD's annual "Education at a Glance" publication, earnings increase with each level of education. In all countries, graduates of tertiary education earn more overall than upper secondary and post-secondary non-tertiary graduates. Besides, the relative earnings premium of individuals with tertiary education has been rising in most countries over the past ten years. Moreover, employment opportunities and the advantages of educational earnings increase at an older age for individuals with tertiary education in most countries and in general, females earn less than males with similar educational levels.

Both individual and public sector have costs while investing in education. If these costs yield higher benefits such as higher earnings for the individuals and higher income taxes and social insurance payments for the governments, individuals and governments have incentive for further investment in education. These economic returns to education for individuals and society can be measured by different cost- benefit approaches such as Net Present Value and Internal Rate of Return. Overall OECD results from the rate of return calculations demonstrate that both private and public returns of tertiary education are higher than upper secondary or post-secondary non- tertiary education, but there are significant variations between countries. The private returns are higher than the social returns, which may be caused by an underestimation of social returns since it is impossible to include indirect social benefits in such calculations. The financial rewards of investing in education are lower for females than males in most countries according to OECD "Education at a Glance" publication; whereas another study showed that women receive higher returns to their schooling investments than those of men. Therefore, comparing the rate of return calculations from different studies has restrictions primarily due to the use of different variables, data and methodologies.

Educational benefits are more than the economic ones, there are also social benefits that education indirectly contributes to. Besides increasing the productivity, innovation,

employability and earnings; education also leads to better private and public health, lower fertility rates, and empowered democratization; for example, voting rate increases with educational level. Education also provides a greater political stability, reduce of poverty and inequality, improved environment quality, and lower crime rates. Since these indirect benefits of education are hard to measure, they are not included in the rate of return calculations. However, their impacts are more than the direct impacts and these spillover effects of education in turn contribute to economic well being.

The third research question was about the Lisbon Strategy, its main objectives, pillars and progress. Globalization and new knowledge driven economies have been two challenges that affect every aspect of people's lives in new world. Therefore, European Economy required a radical change to become more competitive in the future and towards this aim; a 10-year strategic goal - Lisbon Strategy - has been set in European Council meeting in 2000, with an aim of *"become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion."* This strategy is built on economic, social and environmental pillars. The economic pillar includes the transition to a competitive, dynamic, knowledge-based economy. The social pillar has an aim of modernizing the European social model through investing in people and fight against social exclusion, and the environmental pillar draws attention to that economic growth which must be decoupled from the use of natural resources. More specific targets were listed and an open method of coordination (OMC) plans was introduced for the development of strategy at national action. In 2005 a mid term review was held concluding that the results were disappointing and the EU was very unlikely to meet its 2010 goals because of the overloaded agenda, poor coordination, and conflicting priorities.

Following the mid-term review, a new Lisbon Strategy, which did not change the original objectives, but gave priority to Growth and Jobs with the social and environmental aspects, was launched. While approaching the deadline of Lisbon Strategy; the Lisbon Scores Review which shows the relative performances of countries in meeting the Lisbon goals demonstrated that there are greatest shortfalls in the areas of establishing an information society, innovation and R&D, and the enterprise environment compared with dynamic and

competitive economies of the US and East Asia . The result is EU will not have fully achieved Lisbon goals by 2010.

Another research question was about identifying Education and Training Objectives of Lisbon Strategy as well as identifying the benchmarks and indicators in order to analyze the progress in this field. “Education and Training” pillar in the Lisbon Strategy is crucial for the development and success of this ten-year strategic goal. Education and Training is important for setting a new social model as well contributing to other economic objectives of Lisbon Strategy. Approaching the deadline of Lisbon Strategy doesn’t make an undervaluation of “Education and Training” objectives. These objectives are always crucial for the well being of nations. Educated people mean more competitive people, hence more competitive economy. The Council adopted 5 benchmarks that should be achieved by 2010 in order to guide the progress on Education and Training towards Lisbon Objectives. These benchmarks are Early school leavers, Mathematics, science and technology (MST) graduates, Low achievers in reading literacy, Upper secondary attainment and life long participation. Education Council in 2007 also determined 16 core indicators in order to follow-up the progress towards Lisbon Objectives in the field of education training which are participation in pre-school education, special needs education, early school leavers, literacy in reading, mathematics and science, language skills, ICT skills, civic skills, learning to learn skills, upper secondary completion rates of young people, professional development of teachers and trainers, higher education graduates, cross-national mobility of students in higher education, participation of adults in lifelong learning, adult skills, educational attainment of the population and investment in education and training.

The last research question of the study was about the main aim of this thesis, which was analyzing the progress and performance of countries in Education and Training area in the frame of Lisbon Strategy. Regarding the five benchmarks; except the benchmark for Mathematics, Science and Technology graduates; most EU Countries are still behind the targets for the other 4 benchmarks: Early school leavers, low achievers in reading literacy, upper secondary attainment and life long participation. Moreover, the situation for reading literacy of young people was getting worse during the period of 2000 and 2006. Except the

Mathematics, Science and Technology Graduates benchmark, Turkey showed the worst performance on the benchmarks among European Countries.

The results of this study show that there are significant variations among countries in terms of sixteen core indicators. Nordic Countries are the best performers in the education area among European Countries, and even in the world. On the other hand, core education indicators show that EU's newcomers -Central and Eastern European Countries- have significant shortfalls compared to EU Averages. Romania and Bulgaria are the worst performers among EU countries, but as an exception Czech Republic has high performances in some areas in the education and training. Similar to the lowest performers of EU -Romania and Bulgaria-, Turkey's performances are also in the lowest levels according to almost all education and training indicators set by EU compared to other European and OECD Countries .

The citizens of countries with best outcomes in education area also have higher income levels, higher standards of living, higher quality of life and health. Investing in human capital, hence investing in education is crucial for countries for the strength and well being of their economy and society. It is also an important factor for countries in order to be competitive and to provide a sustainable development in the today's dynamic, innovation and knowledge driven world. Therefore, national policies of countries which have worse educational outcomes should be driven to give more importance to education and training area in order to increase the investments, overcome the deficiencies and catch the levels of the best performing countries in this area.

Today is the era of the information; technology is changing rapidly, so the working conditions, social needs and demanded skills are changing. Human capital is the core factor for the nations in order to catch a sustainable development and improve the well being of its citizens and society as well as the economy in this dynamic knowledge-based world.

5.1 Implications

This study is a comprehensive research of Lisbon Education and Training Objectives, which analyses countries according to five benchmarks and sixteen indicators. Based on the results of this study, the following are the suggestions for further research.

First of all, this study analysed education and training objectives of Lisbon Strategy, and so every indicator in question were analyzed in a certain extent. Therefore, focusing on specific indicator areas in education may enable more detailed results in that field. Likewise, this study included the analysis of the performance of the EU, the third countries like USA or Japan and especially Turkey as well as their progress towards Lisbon Education and Training Goals. Further research may focus on a specific country in order to reveal that country's weaknesses and strength in Education and Training towards Lisbon Goals. For example, in this study, Nordic Countries showed high levels in almost all indicators of education that are analyzed. Further research may concentrate on these countries to explore the reason of these countries' successful results in education field. Likewise, concentrating on two countries or two group of countries may enable a clear comparison and may guide the weak side to solve its problems in the area. For instance, comparison of Nordic Countries and Turkey in further research may be proper guidance for Turkey, in order to explore and fix its vacancies in education area.

Finally, this study is based on document analysis. An international comparison among countries has been made through the five benchmarks and sixteen indicators of education, Further research may be conducted through econometrical models by using the data in every indicator of this study.

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ANNEX I

Private net present value for an individual obtaining upper secondary or post-secondary non-tertiary education as part of initial education, ISCED 3/4 (2005)

	Direct cost		Foregone earnings		Gross earnings benefits		Income tax effect		Social contribution effect		Transfers effect		Unemployment effect		Net present value	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Australia	-2 810	-2 810	-27 021	-27 719	73 492	70 932	-29 991	-21 803	0	0	-1 282	-16 141	27 094	18 324	49 482	25 782
Austria	-2 032	-2 032	-38 001	-36 463	146 283	103 739	-35 039	-11 710	-31 945	-22 855	-7 317	-17 035	30 856	19 791	62 805	33 435
Belgium	1 441	1 441	32 999	28 338	63 700	91 261	30 534	33 010	17 237	25 074	0	0	32 171	33 748	13 659	37 145
Canada	2 161	2 161	23 450	24 386	91 065	71 299	27 634	15 208	7 546	7 870	1 368	4 123	25 011	19 989	53 918	37 510
Czech Republic	-1 722	-1 722	-15 426	-14 635	44 813	50 019	-15 791	-13 086	-13 795	-12 108	0	0	65 114	47 116	63 524	55 584
Denmark	578	578	27 078	27 534	111 279	82 278	43 456	23 892	11 003	8 422	21 465	30 149	15 888	11 126	23 587	2 828
Finland ¹	-138	-138	-22 955	-22 309	50 777	32 073	-19 850	-11 118	-4 436	-3 206	-12 018	-15 866	19 051	18 512	10 432	-2 020
France	-2 119	-2 119	-30 492	-27 181	41 450	44 826	-9 575	-6 471	-8 688	-8 892	-7 433	-13 413	22 141	21 332	5 284	8 081
Germany	-5 085	-5 085	-27 421	-27 631	51 356	109 920	-21 356	-28 291	-20 773	-30 735	-5 861	-17 182	48 275	31 043	19 134	32 039
Hungary	-577	-577	-15 805	-15 024	38 406	39 545	-15 715	-12 844	-7 380	-7 415	0	0	16 116	15 343	15 046	19 029
Ireland ¹	-599	-599	-29 199	-28 740	66 937	76 038	-25 960	-14 476	-5 552	-10 369	0	0	25 992	13 203	31 618	35 058
Italy ¹	1 114	1 114	35 954	30 570	89 302	75 509	32 910	26 257	9 243	8 934	0	0	11 406	21 783	21 487	30 417
Korea ²	2 865	2 865	11 898	11 980	68 412	4 787	2 892	555	5 088	515	0	4 777	5 282	2 783	50 950	-12 011
New Zealand	-3 113	-3 113	-28 129	-27 056	83 823	75 992	-26 409	-15 278	-1 130	-1 026	-1 532	-27 132	9 496	9 620	31 051	11 511
Norway	2 372	2 372	33 342	33 625	133 548	83 842	46 232	23 682	14 535	8 476	5 868	13 522	53 406	25 008	84 606	27 123
Poland ¹	-194	-194	-9 622	-8 202	31 601	40 648	-4 240	-4 692	-13 925	-15 282	0	0	23 262	19 665	27 137	31 933
Portugal	-11	-11	-20 262	-16 862	124 862	88 141	-31 103	-12 124	-14 081	-10 489	0	0	4 485	6 606	62 520	50 158
Spain ¹	-481	-481	-5 925	-4 468	52 086	45 552	-12 389	-9 490	-18 111	-4 210	0	0	8 146	21 102	32 604	48 116
Sweden	-19	-19	-19 592	-21 107	93 464	69 113	-30 240	-23 335	-8 283	-6 800	-17 103	-21 409	25 278	27 458	43 505	23 900
Turkey	-324	-324	-10 837	-11 750	37 719	48 598	-6 185	-5 005	-5 950	-5 624	0	0	1 886	-10 770	16 308	15 126
United States	2 689	2 689	21 168	21 572	180 543	126 069	42 737	27 179	15 178	11 526	3 874	5 803	18 033	24 588	112 929	81 889
Countries average	-1 545	-1 545	-22 346	-22 002	79 713	68 104	-24 297	-16 386	-10 460	-9 987	-4 149	-8 886	23 524	18 924	39 840	28 223

Note: Cash flows (components) are discounted by 5% interest rate.

Assuming that foregone earnings for all individual refer to the minimum wage, except those countries reporting full time earnings: the Czech Republic, Hungary, Poland and Portugal.

1. Year of reference 2004.

2. Year of reference 2003.

Source: OECD, Education at a Glance 2009, Table A8.1, p.165

(<http://dx.doi.org/10.1787/664146203473>)

Public net present value for an individual obtaining tertiary education as part of initial education (2005)

	Public direct cost		Public foregone revenues		Income tax revenues		Social contribution revenues		Transfers revenues		Unemployment effect		Net present value	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Australia	-12 728	-12 728	-7 271	-7 271	67 246	18 855	0	0	0	0	120	2 501	47 368	31 357
Austria	-47 361	-47 361	-11 047	-11 047	67 771	48 018	77 964	11 181	0	11	7 309	7 119	17 586	25 911
Belgium	-19 787	-19 787	-7 262	-7 262	88 530	62 569	30 552	36 565	0	0	4 154	9 774	96 186	81 858
Canada	30 950	30 950	2 834	2 834	51 408	33 442	3 981	11 444	0	0	2 271	1 738	23 875	12 839
Czech Republic	-9 221	-8 517	-6 820	-5 557	105 160	22 938	61 528	15 252	0	0	9 890	5 155	160 834	29 239
Denmark	-47 726	-47 726	-16 003	-16 003	65 470	30 576	9 709	6 887	3 485	2 059	-759	1 506	14 236	-22 702
Finland ¹	-31 234	-31 234	-825	-825	70 330	38 061	11 252	7 186	0	6 932	6 088	3 883	55 612	24 003
France	22 840	22 840	8	8	33 346	20 177	19 513	13 530	6 199	27 305	521	2 739	36 730	40 903
Germany	-30 501	-30 501	-18 783	-18 783	65 039	33 018	31 770	22 852	0	0	16 079	6 938	63 604	13 554
Hungary	-13 606	-13 606	-7 787	-7 785	81 331	60 670	77 764	18 865	0	11	5 617	5 777	94 804	61 921
Ireland ¹	-15 358	-15 358	-3 167	-3 167	87 740	70 459	8 544	13 786	0	0	1 454	807	74 219	46 027
Italy ¹	14 483	14 483	11 834	11 834	72 942	46 791	19 255	12 602	0	0	2 125	189	63 756	32 887
Korea ²	-3 210	-3 210	-1 535	-1 535	16 412	6 388	9 216	12 058	0	0	398	51	21 280	13 752
New Zealand	-14 627	-14 627	-2 322	-2 322	43 843	22 973	1 520	1 232	188	6 130	-389	316	28 193	13 732
Norway	-30 242	-30 242	-14 635	-14 635	52 085	32 960	10 079	9 348	0	0	565	1 453	17 851	-1 116
Poland ¹	-9 321	-9 321	-10 134	-8 435	18 900	10 616	44 864	29 085	0	0	12 912	11 960	57 221	33 925
Portugal	-10 988	-10 988	-5 030	-3 925	49 943	56 682	18 771	22 900	0	0	-2 425	2 306	50 271	66 975
Spain ¹	-12 633	-12 633	-1 707	-1 707	26 253	25 019	6 571	7 015	0	0	1 268	3 258	19 752	21 012
Sweden	-79 806	-79 806	-6 414	-6 414	47 567	18 857	38 900	4 687	0	11	7 085	1 777	17 197	-10 923
Turkey	9 233	9 233	4 726	4 726	12 674	12 126	11 273	11 117	0	0	358	2 971	10 346	12 255
United States	29 995	29 995	3 452	3 452	100 352	55 429	25 741	17 914	0	0	7 472	3 574	100 119	43 469
Countries average	-21 003	-20 970	-6 954	-6 716	57 933	35 082	18 250	14 535	-469	2 020	3 239	3 331	51 954	27 280

Note: Cash flows (components) are discounted by 5% interest rate.

1. Year of reference 2004.

2. Year of reference 2003.

Source: OECD, Education at a Glance 2009, Table A8.4, p.168

(<http://dx.doi.org/10.1787/664146203473>)

ANNEX II

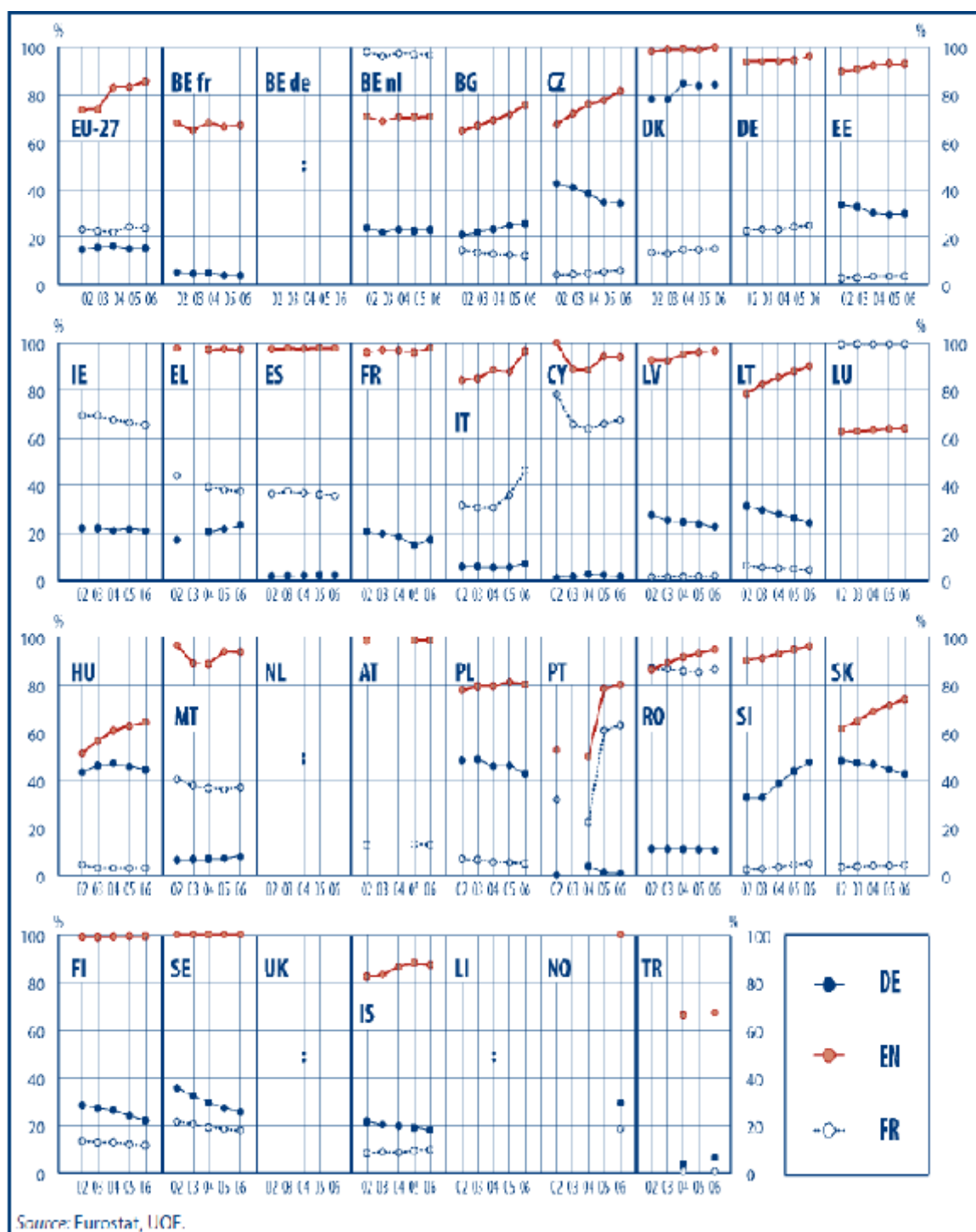
International Standard Classification of Education (ISCED) Levels

0 Pre-primary education	The initial stage of organised instruction; it is school- or centre-based and is designed for children aged at least 3 years.
1 Primary education	Begins between 5 and 7 years of age, is compulsory in all countries and generally lasts from four to six years.
2 Lower secondary education	Continues the basic programmes of the primary level, although teaching is typically more subject-focused. Usually, the end of this level coincides with the end of compulsory education.
3 Upper secondary education	Generally begins at the end of compulsory education. The entrance age is typically 15 or 16 years. Entrance qualifications (end of compulsory education) and other minimum entry requirements are usually needed. Instruction is often more subject-oriented than at ISCED level 2. The typical duration of ISCED level 3 varies from two to five years.
4 Post-secondary non-tertiary education	These programmes straddle the boundary between upper secondary and tertiary education. They serve to broaden the knowledge of ISCED level 3 graduates. Typical examples are programmes designed to prepare pupils for studies at level 5 or programmes designed to prepare pupils for direct labour market entry.
5 Tertiary education (first stage)	Entry to these programmes normally requires the successful completion of ISCED level 3 or 4. This level includes tertiary programmes with academic orientation (type A) which are largely theoretically based and tertiary programmes with occupation orientation (type B) which are typically shorter than type A programmes and geared for entry into the labour market.
6 Tertiary education (second stage)	Reserved for tertiary studies that lead to an advanced research qualification (Ph.D. or doctorate).

Source: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/ISCED

ANNEX III

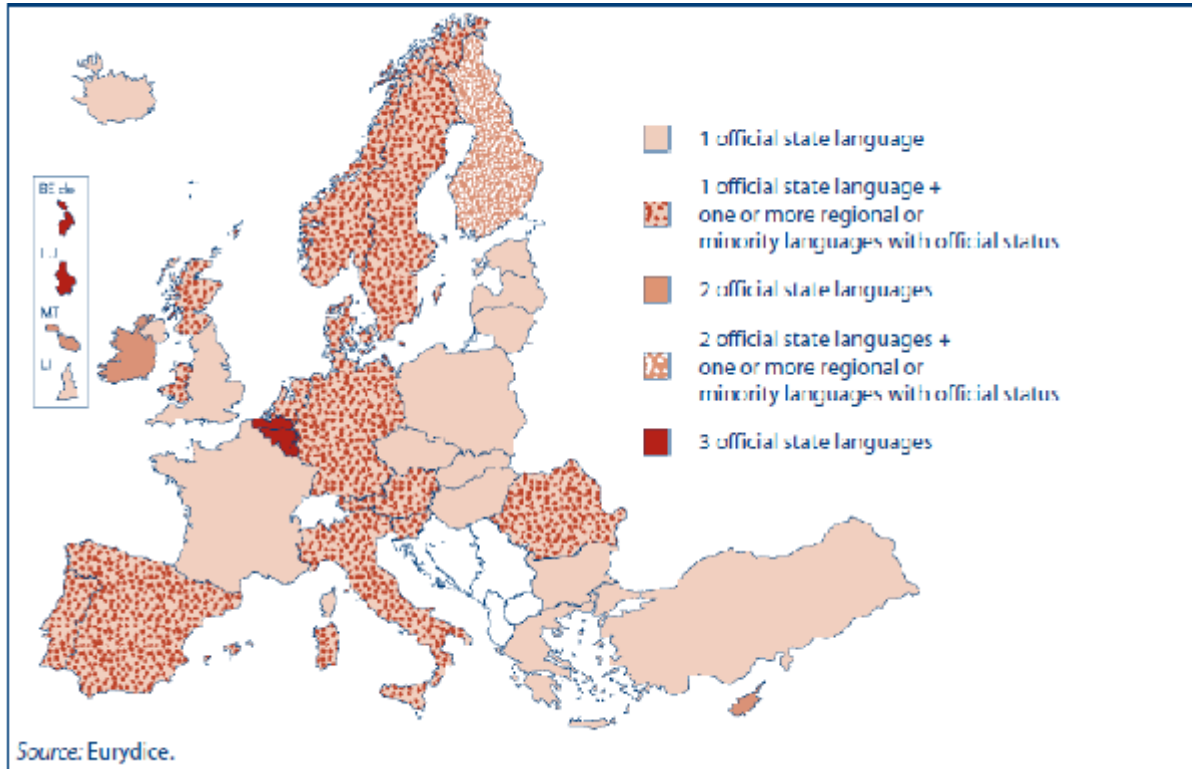
Trends in the percentage of pupils learning English, German and French in general secondary education (ISCED 2 and 3), with respect to 2001/02, 2002/03, 2003/04, 2004/05 and 2005/06



Source: EUROSTA&EURYDICE: Key data on teaching languages at school in Europe, 2008 Edition, p.74

ANNEX IV

Official state languages and regional or minority languages with official status in Europe, 2007



Source: EUROSTA&EURYDICE: Key data on teaching languages at school in Europe, 2008 Edition, p.18

ANNEX V

The Networked Readiness Index 2008–2009 rankings

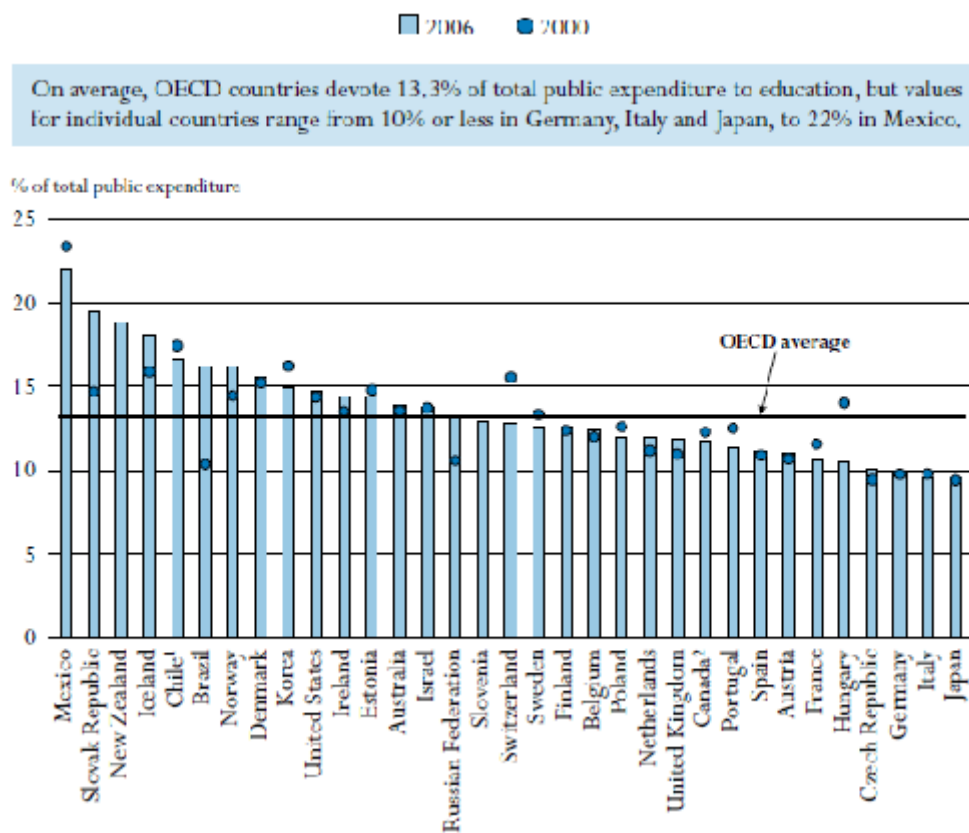
2008–2009 rank	Country/Economy	Score	2006–2007 rank	Country/Economy	Score
1	Denmark	5.86	68	Bulgaria	3.80
2	Sweden	5.81	69	Poland	3.80
3	United States	5.80	70	Vietnam	3.79
4	Singapore	5.87	71	Montenegro	3.79
5	Switzerland	5.55	72	Sri Lanka	3.79
6	Ireland	5.53	73	Kazakhstan	3.79
7	Iceland	5.50	74	Russian Federation	3.77
8	Norway	5.49	75	Dominican Republic	3.76
9	Netherlands	5.45	76	Egypt	3.76
10	Canada	5.41	77	Botswana	3.72
11	Korea, Rep.	5.37	78	El Salvador	3.69
12	Hong Kong SAR	5.30	79	Macedonia, FYR	3.67
13	Taiwan, China	5.30	80	Senegal	3.67
14	Australia	5.29	81	Trinidad and Tobago	3.67
15	United Kingdom	5.27	82	Guatemala	3.64
16	Austria	5.22	83	Indonesia	3.62
17	Japan	5.19	84	Serbia	3.62
18	Finland	5.19	85	Philippines	3.60
19	France	5.17	86	Monaco	3.59
20	Germany	5.17	87	Argentina	3.58
21	Luxembourg	5.10	88	Georgia	3.48
22	New Zealand	5.04	89	Peru	3.47
23	Ireland	5.03	90	Niger	3.45
24	Belgium	5.02	91	Gambia, The	3.44
25	Israel	4.98	92	Norbin	3.44
26	Malta	4.79	93	Mongolia	3.43
27	United Arab Emirates	4.70	94	Syria	3.41
28	Malaysia	4.70	95	Honduras	3.41
29	Uatar	4.63	96	Venezuela	3.39
30	Portugal	4.63	97	Korea	3.36
31	Slovenia	4.57	98	Pakistan	3.31
32	Czech Republic	4.55	99	Moldova	3.30
33	Cyprus	4.52	100	Guyana	3.29
34	Spain	4.50	101	Libya	3.28
35	Lithuania	4.40	102	Zambia	3.28
36	Burkina Faso	4.38	103	Ghana	3.25
37	Bahrain	4.38	104	Pakistan	3.25
38	Tunisia	4.31	105	Albania	3.23
39	Chile	4.32	106	Bosnia and Herzegovina	3.23
40	Saudi Arabia	4.28	107	Mali	3.18
41	Hungary	4.28	108	Algeria	3.14
42	Puerto Rico	4.25	109	Maritime	3.12
43	Slovak Republic	4.19	110	Malawi	3.12
44	Jordan	4.19	111	Cote d'Ivoire	3.12
45	Italy	4.18	112	Madagascar	3.09
46	China	4.15	113	Burkina Faso	3.07
47	Thailand	4.11	114	Armenia	3.08
48	Latvia	4.10	115	Kyrgyz Republic	3.04
49	Croatia	4.09	116	Ecuador	3.03
50	Oman	4.08	117	Suriname	3.03
51	Mauritius	4.04	118	Lesotho	3.02
52	South Africa	4.04	119	Tanzania	3.01
53	Jamaica	4.01	120	Uganda	2.98
54	India	4.01	121	Benin	2.96
55	Greece	4.00	122	Paraguay	2.93
56	Costa Rica	3.99	123	Cameroon	2.93
57	Kuwait	3.99	124	Mozambique	2.91
58	Romania	3.99	125	Nicaragua	2.90
59	Brazil	3.94	126	Cambodia	2.89
60	Azerbaijan	3.93	127	Nepal	2.89
61	Turkey	3.91	128	Bolivia	2.82
62	Ukraine	3.86	129	Ethiopia	2.80
63	Brunei Darussalam	3.84	130	Bangladesh	2.70
64	Colombia	3.84	131	Burundi	2.63
65	Uruguay	3.80	132	Zimbabwe	2.49
66	Panama	3.84	133	Timor-Leste	2.47
67	Mexico	3.84	134	Chad	2.44

Source: World Economic Forum & INSEAD, "Global Information Technology Report 2008-2009, <http://www.weforum.org/pdf/gitr/2009/Rankings.pdf>

ANNEX VI

Total public expenditure on education as a percentage of total public expenditure (2000, 2006)

The chart shows direct public expenditure on educational institutions plus public subsidies to households (including subsidies for living costs) and other private entities, as a percentage of total public expenditure, by year. It must be recalled that public sectors differ in terms of their size and breadth of responsibility from country to country.



Source: OECD- Education at a Glance 2009 Table B4.1, p.238 (www.oecd.org/edu/eag2009).

1. Year of reference 2007 instead of 2006.
2. Year of reference 2005 instead of 2006.

ANNEX VII

Expenditure on educational institutions as a percentage of GDP, by level of education (1995, 2000, 2006)

	Total all levels of education			Primary, secondary and post-secondary non-tertiary education	Tertiary education
	1995	2000	2006		
OECD countries					
Australia	5.3	5.6	5.7	4.0	1.6
Austria	6.2	5.5	5.5	3.7	1.3
Belgium	m	6.1	6.1	4.1	1.3
Czech Republic	5.1	4.2	4.8	3.0	1.2
Denmark	6.2	6.6	7.3	4.4	1.7
Estonia	5.8	5.4	4.9	3.5	1.1
Finland	6.3	5.6	5.8	3.8	1.7
France	6.6	6.4	5.9	3.9	1.3
Germany	5.1	4.9	4.8	3.1	1.1
Greece	2.6	3.6	m	m	m
Hungary	5.3	4.9	5.6	3.4	1.1
Iceland	m	7.1	8.0	5.3	1.1
Ireland	5.2	4.5	4.7	3.5	1.2
Italy	4.6	4.5	4.9	3.5	0.9
Luxembourg	m	m	m	3.3	m
Mexico	5.1	5.0	5.7	3.8	1.1
Netherlands	5.4	5.1	5.6	3.7	1.5
New Zealand	m	m	6.3	4.3	1.5
Norway	5.9	5.1	5.4	3.7	1.2
Poland	5.2	5.6	5.7	3.7	1.3
Portugal	5.0	5.4	5.6	3.6	1.4
Slovak Republic	4.7	4.1	4.3	2.7	1.0
Spain	5.3	4.8	4.7	2.9	1.1
Sweden	6.0	6.3	6.3	4.1	1.6
Switzerland	6.0	5.7	5.9	4.2	1.4
Slovenia	m	m	6.1	4.2	1.3
Turkey	1.7	2.5	2.7	1.9	0.8
United Kingdom	5.2	4.9	5.9	4.3	1.3
United States	6.6	7.0	7.4	4.0	2.9
Japan	5.0	5.0	5.0	2.8	1.5
Korea	m	6.4	7.3	4.3	2.5
Russian Federation	m	2.9	3.9	2.0	0.8
Canada	6.7	5.9	6.5	3.7	2.7
OECD average	~	~	5.7	3.7	1.4

Source: OECD, Education at a Glance