Dilemmas in Hungarian higher education

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SUMMARY FINDINGS, CONCLUSIONS, RECOMMENDATIONS

Higher rates of employment are essential to economic growth. The best way to increase the rate of employment is through training and education. Transforming education to mass education, as well as the weakening of the previous knowledge of students has caused a quality decay among job-seekers. The motivation behind education is not sound; the number of majors in higher education is higher than necessary and is not adjusted to the requirements of the labour market. Hands-on training has been forced into the background. Career offices at large colleges and universities may improve the entrants' chances of finding a job.

Higher education institutions are also responsible for the continuous further training of their graduate students with BSc degrees, which is indispensable to life-long learning. It is important to promote R&D activities and innovation capabilities associated with the world of academics as a way to strengthen cooperation and ties between universities, research institutions and innovative enterprise. We have serious arrears to make up in this field. It seems that BSc graduates have a hard time finding a job as their three-year course does not make it possible for them to acquire in-depth theoretical knowledge, and their six-month placement does not provide them with sufficient professional knowledge or skills either. Our paper concentrates on exploring the opinions held by agricultural professionals with both a tertiary degree and work experience of higher education. It also examines the requirements of the labour market for graduates just starting their careers. Analysis of our findings so far has led us to believe that it is necessary to re-think tertiary education in its entirety, to strengthen practical training and to make sure that the minimum level of professional resources is made available.

INTRODUCTION

Since the end of the 20th century knowledge has become more and more important. In countries that are developing dynamically human capital has become one of the most significant economic factors. If we consider that the most important role of education is labour force training and its preparation for joining the economy, it is easy to see that the basis of competitiveness of the economy is the skilled labour force. Due to these facts, the knowledge-based economy makes great demands for the education system as well that can enhance the improvement of the economy's competitiveness.

Recently there has been special emphasis on the examination of the relationship between higher education and economy, because this level of education can be directly connected to the R&D sector. Consequently, the innovation potential involves universities, research institutions and innovative enterprises; their activities and relationships evolved between them.

As a result of the recent scientific and technological development, new requirements have appeared regarding knowledge. Learning and knowledge are becoming

more and more significant economic factors. From the point of view of a nation's economy, the most important function of education is to contribute to economic growth with the help of 'human capital'. The value of this possibility has significantly increased as a result of the global economic crisis. It forces education to play a different role in the society. That is why the National Office of Research and Technology supports the consortiums involving universities, research institutes, large companies and SME's in order to achieve results outstanding even at an international level. The main task of education can be defined not by making students acquire as much knowledge as possible, but by developing their problem-solving skills, their ability to find the most important and relevant information and by teaching them the norms of honest conduct.

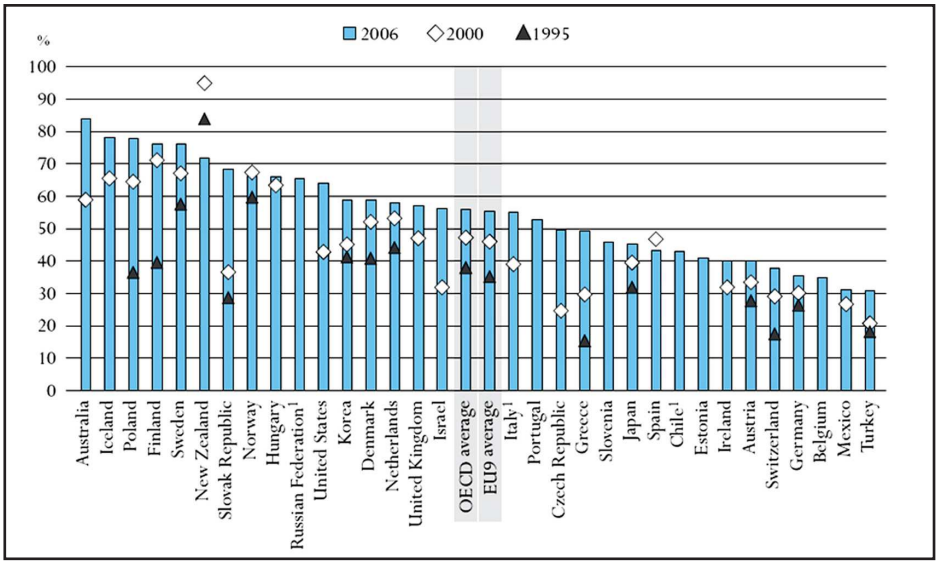
Today, education in schools does not always serve respect, consideration and wisdom. Therefore – if we want to train quality students – we must not neglect autonomous problem solving and learning in higher education either.

QUANTITY AND QUALITY IN HIGHER EDUCATION

While in 1995 37% of a given population studied in higher education, this ratio is 57% on the average in the OECD countries (Fig. 1).

Figure 1

The ratio of participants in higher education in the OECD countries 1995-2006 (%)



Source: OECD, 2008

There are lots of reasons for the outstanding increase. On the one hand, the labour market excites the growing number of students in higher education because higher qualification means more secure careers and higher salaries. However, it is a serious dilemma how the increase in quantity affect/will affect the preparedness quality of the newly graduated.

On an international level, the most popular degrees are the ones in the fields of arts, economics and law. There are diffe-

Table 1

Ratio of graduates according to branches of education in the academic year 2005-2006 (%)

Country	Pedagogy and education science	Arts	Social, economic and law studies	Natural sciences and Computer Science	Technology	Agriculture, Veterinary	Health and social care	Services	Other and not available
	Percentage of students who acquired their degrees in the given field as compared to the total number of graduates								
Austria	14.0	9.0	30.4	10.2	20.3	2.5	10.1	3.5	0.0
Belgium	18.0	9.9	29.1	8.2	9.5	2.0	17.5	1.7	4.1
Bulgaria	7.7	7.8	48.2	5.0	16.1	1.8	6.6	6.8	-
Czech Republic	16.4	8.7	30.4	7.5	14.7	3.5	10.9	4.2	3.7
Denmark	8.8	13.5	29.4	8.4	10.5	1.9	24.3	3.2	-
United Kingdom	10.5	15.4	30.7	14.1	8.0	0.9	18.3	0.7	1.3
Estonia	7.1	9.4	39.7	10.3	14.8	2.9	7.6	8.2	-
Finland	7.2	12.7	22.9	8.8	21.2	2.3	18.9	6.0	-
France	1.9	12.5	42.1	12.3	14.6	0.7	12.1	3.8	-
Greece	9.9	13.1	28.0	14.9	12.3	3.6	9.7	8.5	-
Holland	15.3	8.4	39.1	7.8	7.8	1.6	16.7	3.3	-
Croatia	8.4	9.0	38.2	6.0	11.9	3.0	10.3	13.2	-
Ireland	5.5	23.2	28.9	16.2	12.0	0.6	10.6	2.0	
Poland*	13.3	8.0	41.4	9.3	7.7	1.5	7.5	11.3	0.0
Lithuania	17.1	6.0	54.1	4.8	7.8	1.1	4.8	4.3	-
Latvia	16.0	6.5	40.3	5.2	16.6	2.0	10.1	3.3	-
Hungary**	19.1	5.4	40.5	6.8	7.1	2.9	9.8	8.4	-
Germany	7.5	10.5	24.2	10.9	16.3	2.3	24.1	3.9	0.4
Norway	18.9	7.1	25.6	8.1	7.7	1.2	25.7	5.0	0.7
Italy	4.7	16.1	39.6	6.9	16.5	1.7	12.0	2.5	-
Portugal	15.9	8.7	26.4	10.4	12.9	1.9	17.7	6.1	-
Romania	2.8	10.1	46.1	5.0	17.5	2.4	11.3	2.5	2.3
Spain	11.3	9.0	28.8	10.5	16.5	2.2	14.1	7.6	0.0
Switzerland	8.7	6.6	40.2	9.4	13.6	3.1	9.8	8.4	0.2
Sweden	16.8	5.9	24.0	7.9	17.9	1.0	24.4	2.1	-
Slovakia	15.2	6.0	28.8	9.1	16.8	3.5	13.9	6.7	-
Slovenia	10.2	5.4	46.5	4.1	14.3	2.4	10.9	7.2	-

* After graduation and without PhD programmes ** Without higher level special training, special further training and PhD programmes.

Note: The main fields of education listed in the table above can be found on the homepage of the Statistical Review (www.ksh.hu/statszemle).

Source: Ladányi, 2008

rences between certain countries in the branches of education (Table 1). The ratio of unemployment is the lowest in the case of graduates.

Nevertheless, young people's difficulties in finding employment is reflected in the unemployment rate of the 15-24-year-olds, which, on a national level, was 2.3 times as much as that of people between the ages of 25 and 64 in 2000, while 6 years later it amounted for nearly 2.9 times as much. In 2006, the youngest labour force had the most favourable position in Western and Central Transdanubia, while in the regions most badly hit by unemployment in general, their situation was the worst (North Hungary – 26.2%, North Great Plain – 26.8%).

Unemployment is mainly serious among people with lower qualifications. However, the number of unemployed graduates have also risen in the labour market in recent years. In 2006, the highest qualification of one third of the unemployed population was primary school, another third finished a vocational secondary school, while 26% a technical or grammar secondary school, and nearly 8% had university or college degrees. Between 2000 and 2006, the ratio of the unemployed who finished primary school did not change significantly. However, the ratio of graduates doubled, increased from 4 to 8% *(Central Statistical Office, 2008).*

However, mass higher education launches more and more entrants to the market who – due to the lack of suitable knowledge – do not get a job appropriate to their degrees.

There is an annual survey carried out in companies by Hungarian Chamber of Commerce and Industry, whose aim is to examine the expected employment possibilities of new graduates. The survey of the year 2008 found that a degree in itself does not mean a competitive advantage for companies. The majority of businesses find the applicants' knowledge, language skills and work experience very important. The respondents unanimously agree that along with the hard skills, soft skills are gaining more and more importance in providing success for applicants. Creating and improving the different soft skills must be in the focus of the whole verticum of education. In 2002, a list of 23 skills was compiled by the OECD on the basis of its research carried out in several countries. The list contained not only key skills such as communication, teamwork, ability to study and improve performance but also managerial and work-related ones. They included creativity, self-confidence, language skills, critical attitude, people skills, decision-making, overall thinking and the ability to concentrate on processes as well as strategy-making. Based on this fact, we think it would be important to lay more emphasis on developing the different skills in higher education, too. For this reason, it is necessary to rethink and revalue the role and tasks of higher education.

As the opinions of employers are important messages for higher education, the career monitoring system of those who have a degree is getting more and more attention in order to improve the quality of higher education in Hungary. Article 34 of Higher Education Law prescribes career monitoring for the institutions. Besides the outer, legal provisions this kind of feedback might be advantageous for the higher education institutions as well

- feedback towards the institutions – tighter relationship between labour market and higher education;
- quality assurance element;
- career-orientation assistance – it is more observable how employers evaluate particular trainings and institutions.

THE SITUATION OF HUNGARIAN HIGHER EDUCATION

The appreciation of the role of knowledge can also be proved by the data below. While in 1960 only 3.2% of the active population had higher education degree, this ratio increased to 12.3% by the time of the regime change, it was 14.2% in 2000 and we reached 16.5% in 2006.

From the very beginning of the 1990s greater emphasis has been placed on joining higher education. The number of students studying in higher education has increased by leaps and bunds. The increase was almost continuous until 2004. From that time on the number of applicants have becoming less (Table 2).

Table 2

The number of applied and admitted students in higher education (persons)

Year	Applied			Admitted		
	Total	Basic, regular	State	Total	Basic, regular	State
2001	148 880	83 642	106 288	98 031	48 622	50 826
2002	164 219	87 405	115 072	108 903	51 148	55 161
2003	159 885	84 857	103 163	106 024	50 561	55 108
2004	167 082	94 048	115 798	109 562	53 155	59 641
2005	149 829	90 601	114 008	102 960	51 195	60 028
2006	132 527	83 836	103 422	93 898	52 850	57 796
2007	108 854	76 392	88 794	81 563	50 405	48 724
2008	96 986	65 240	81 389	81 101	48 567	52 776

Source: www.felvi.hu

In the 1990s the reasons for this increase by leaps and bounds was that those who were born in the 1970s became 18-19 years old. On the other hand, due to the economic transformation the number of the unemployed increased by leaps and bounds, therefore, as far as people applying for higher education were concerned, 'delaying' in starting a job was also a motivation factor.

The higher education structure in Hungary was a dual system until 2006, in which students, after the 6-8-semester college education, could participate in university education only after a serious screening. Practically speaking, the choice of career was made by joining a particular institution as permeability between majors was not possible either. However, in the frame of market economy, this traditional system did not seem to be competitive. Maybe the biggest problem was that degrees obtained in Hungary could not be accredited automatically abroad; therefore student and teacher mobility had serious obstacles.

Examining the Eurostat data from 2006 it can be ascertained that the mobility of Hungarian college and university students significantly lag behind the European average. It is not the one and only problem that merely a small number of Hungarian students study abroad for a shorter or longer period but the Hungarian higher education institutions – except some of them – are not able to provide courses for students from foreign countries.

By the globalization of economy knowledge and education have also been globalized. Globalization and information boom mean new challenges for higher edu-

cation *(Wachtler – Marselek, 2001)*. It was indispensable to change higher education. Such a standardized system has been created that provides permeability both between majors and institutions. This system preserves the intellectual values and traditions of the particular member countries and also helps the student and teacher mobility in order to invest the knowledge accumulated in the particular countries in other countries as well *(Magda et al., 2008)*.

The Erasmus programme assists this mobility. When started in 1997 3 thousand students participated in the EU; today 160 thousand students are able to gain experience in foreign countries due to this programme. As for the whole period of the programme is concerned, by 2012 it is expected to increase the number of participants to 3 million. The Erasmus also supports about 25 thousand teachers as well who are able to stay abroad for a shorter time every year. The programme is also very popular in Hungary; the number of participating students and teachers has been increasing, although not fast enough.

The new, three-tier education system in Hungary – if the content is appropriate – enables to have proper higher education. To promote competitiveness and to achieve the future goals laid down in the national development plan it is necessary to isolate and determine three targets

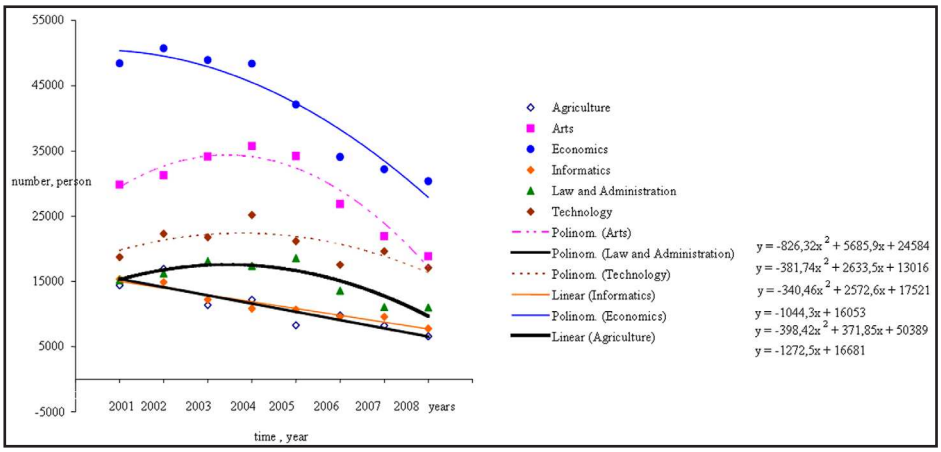
- the first output (BSc), should serve the competitive labour market;
- the second output (MSc), should be appropriate for development and scientific training;
- the third output (PhD) should be the internationally appreciated, competitive basis of the basic sciences and research and development *(Magda, 2006)*.

Since 2004, the number of students applying for higher education has continuously been decreasing, but the admission rate has been increasing. Fewer and fewer students want to study further, but the chance for admission has significantly grown. In 2004 the admission rate was only 65.6%, while in 2008 83.4% of the students applied were admitted.

As far as particular and important trainings are concerned, the number of applications between 2001 and 2008 decreased. Especially the field of agricultural, economics and informatics lost their popularity. This trend can be seen in Fig. 2.

Figure 2

The number of applicants for particular trainings

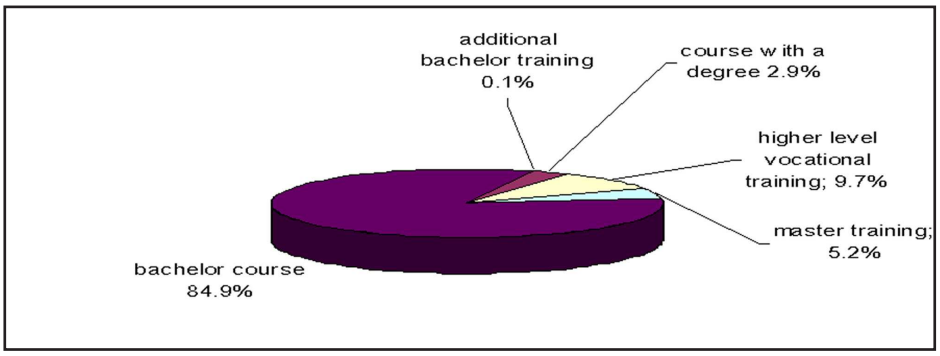


Source: www.felvi.hu

In the year of 2008, 84.9% of the students studied in BSc education and 5.2% in MSc education. The rate of higher qualification education has increased (Fig. 3).

Figure 3

The participation rate of students admitted in particular forms of education (%)



Source: www.felvi.hu

In 2008, 69% of the students admitted to higher education intended to study in full-time, 27.8% in correspondence, while 1% in evening and 2.2% in distance education. 35% of the students starting their studies in 2008 had to pay a fee, while 65% of them received state financial support. Their foreign language skills are not sufficient, 51.5% of the students do not have any kind of foreign language certificates (Table 3).

Table 3

Foreign language skills of students admitted to higher education, 2008

Type of certificate	Number of students admitted	Percentage within all admitted students (%)
B2 – oral part	1 552	1.9
B2 – written part	302	0.4
B2 – both oral and written parts	25 729	31.8
C1 – oral part	183	0.2
C1 – written part	46	0.1
C2 – both oral and written parts	9 510	11.8
Only B1 certificate	1 144	1.4
No certificate	42 456	52.5
Total	80 922	100.0

Source: www.felvi.hu

TEACHING IN THE CHANGING ENVIRONMENT

Hungarian higher education can become successful only if it goes through certain changes. These changes are necessitated by the poorer knowledge and motivation of the admitted students and the requirements of the labour market. Unfortunately, the knowledge and skills of the students applying for higher educati-

on are far poorer than in the past years. The students have less mature personalities than 10-15 years ago. In most secondary schools, regular hard work is not a requirement, and the phenomenon of mass education has also made the situation worse. Teachers' material and moral appreciation is poor, which leads to contra selection.

In his keynote lecture in the *Agricultural Economic Committee of the Hungarian Academy of Science, Magda (2006)* analyses the relationship between science and higher education, and emphasizes the fact that it has always been and it is still the defining factor of a nation's competitiveness how outstanding a role education and science play. The challenges of the 21st century unambiguously draw our attention to the fact that science, the economy and education can only meet the requirements of development and innovation through close cooperation. Since the beginning of the 1990's, higher education has gained an ever increasing importance. The number of the students in higher education continually increased until 2004. As higher education became available for the masses, it resulted in decreased requirements, and the predominance of arts over sciences.

In Hungary, 40% of the students graduate from the fields of social sciences, economics and law, while the rate of technological degrees does not reach 8%. In developed countries, the ratio of graduates with technological qualifications is twice as much as in Hungary. Students prefer degrees that can be acquired more easily since they can be more successful in that way compared to their situation without any degrees.

Gábor (1970) emphasises that traditional universities admit only the most outstanding people, probably 5 or maximum 12% of the population. This is the same ratio as the number of well-paid and socially valued jobs available in an industrial society. According to a survey carried out in the USA, only 58% of the students can hope to get a higher salary and have a more interesting career at the end of their studies, while for the rest 'university studies only mean the possibility of changing their environment and not getting a higher salary'. Not even mass education can deny the main functions of universities, i.e. the conveyance of knowledge and making people like knowledge. 'A new type of education must be created, a mixture of entertainment and teaching, that will enable even the ones with fewer talents to appreciate the complex civilisation they live in. The technical means necessary for doing it are already available – music, films, travelling, games –, and it is the teachers who can make them efficient devices.'

When examining education, it is very important to closely look at regional differences. 'In case higher education is concentrated mainly in Budapest and one or two major cities in the future, our lagging behind the EU will continue along with an increasing number of inhabitants leaving countryside regions due to a lack of knowledge that could create values' *(Magda, 2007)*.

INNOVATION AND EDUCATION

Within the frameworks of the First Innovation Action Plan of the year 1996, the European Committee's Announcement defined innovation in the following way: 'It is the ability to use and process new knowledge in order to increase productivity and develop new products and services.' The Announcement sets a goal according to which the EU should become the most competitive and knowledge-based economy of the world.

Its leaders aim to develop the European Union into the most competitive and knowledge-based economy of the world. One of its key issues is the development of innovation on the level of the

Union, regions and businesses. Innovation is a new, higher-quality satisfaction of consumer needs. Implementing regional policy programmes that encourage innovation may contribute to the fast development of under-developed regions. Innovation can be assisted by the state and regional administration through direct support or creating an encouraging environment. The final result of innovation is a new product provided for consumers, but the new technology and new organisational relationships making its production possible are also important elements. The regional innovation potential includes universities, research institutes and innovative businesses, as well as the system of their relationships. In Hungarian regions, innovative conduct is not sufficient either on a regional or business level *(Marselek et al., 2005)*.

There are no professional organisations that are able to carry out the innovation process from ideas to implementation. The departments responsible for development at multinational and transnational companies can be found beyond Hungarian borders. The solution for that problem may be technological transfer.

The innovation-friendly environment of regions may result in rapid regional development, even in case of a relatively low amount of financial resources, provided the human resources are suitable for it.

The main goal of regional innovation strategies is to increase the innovation capacity of the region, and to support various types of cooperation between businesses, scientific and technological, as well as state organisations and institutions.

Elaborating a regional innovation strategy is a task that involves all the participants of research and technology development – representatives of both the private and public sectors, technology transfer institutions, organisations providing innovation services etc. The consultations between the above mentioned parties must focus on identifying the needs and requirements of the businesses of the region. It is important to survey the qualification of the human resources, the level of education, the situation of the research institutes, the plans of the private businesses, the innovation-encouraging role of industrial groups, the capital-attracting ability of the industrial parks, and the relationships created between these participants. Each region has to work out its concept on technological development and innovation strategy in order to create the strong multilateral relations between the universities, research institutes and the economy that are necessary for the development of high-tech industries.

In Hungary, the number of businesses involved in technological innovation amounts for 700, and fewer than 20 of them spends half of the corporate R&D spendings. 22-23% of Hungarian SME's are innovative, 2-3% of them are outstanding, while the others are inactive and disinterested. For them, R&D does not mean a factor of competitiveness, and not included in their strategy.

According to *Veres (2005)*, the increasing openness of businesses and the rapid changes force employees to make continuous learning an organic part of retaining and realizing their personal careers.

The innovation potential of a region is an important factor in regional development. Its participants include all the people and factors that determine, support or even hinder innovation. As a result, innovation potential involves universities, research institutes and innovative businesses, their activities and the relationships between them. The domestic and international indicators are shown in Table 4.

As far as innovation is concerned, Hungary significantly lags behind developed

countries. It would be extremely important to secure new graduates in the fields of science and technology and increase the ratio of the private sector in Research and Development. The financial resources are indicated in Table 5.

Table 4

Domestic R&D funding through comparing indicators
(SII, R&D/GDP, patent/1m inhabitants)

	USA	Japan	EU15	EU25	HU
Summarized Innovation Index (SII)	0.60	0.65	0.46	0.42	0.31
State R&D spendings/GDP (%)	0.86	0.89	0.70	0.69	0.62
Business R&D spendings/ GDP (%)	1.91	2.65	1.30	1.26	0.36
New EPO - patents/1m inhabitants	154.5	166.7	158.5	133.6	18.3
New USPTO - patents/1m inhabitants	301.4	273.9	71.3	59.9	4.9

Source: European Innovation Scoreboard (EIS) 2005

Table 5

R&D spendings
(financial resources, billion HUF)

Year	Businesses	State budget	Other domestic resources	Foreign resources
2000	39.79	52.21	2.19	11.20
2005	81.90	102.70	0.97	22.20
2006	103.00	106.50*	1.50	26.90
2007	107.80	109.10*	1.57**	27.20

* In association with local governments; ** Only non-profit organisations.
Source: Central Statistical Office, Research and Development, 2007

According to the decision of the EU, the Institute of European Innovation and Technology will be established in Hungary, which may improve the situation.

The National Office of Research and Technology also has a significant role. *Csongrádi (2008)* quotes that *Minister Károly Molnár* announced at the end of last year that the Innovation Fund would receive 28.7 billion funding from the state budget. Apart from that, the financial resources of the Fund would also be increased by the innovation contribution paid by businesses. Thus, the total income would be 55.9 billion in 2009, from which 51.9 billion would be given for projects of applying organisations. Apart from the Innovation Fund, there will be 100.15 billion forints available in the New Hungary Development Plan for applicants planning R&D activities. If we take all the resources into consideration, it can be stated that Hungarian organisations can apply for nearly 170 billion forints available for sup-

porting R&D, which is a major factor of the country's competitiveness. The National Office of Research and Technology is responsible for only the operation of the application system related to the Innovation Fund. Businesses can be encouraged to spend more on R&D only by working out project funding systems that meet their demands and as a result, they are willing to spend significantly more from their own resources than earlier.

Today, we live in the age of network economy. In network economies, spin-off businesses have a significant role and higher education institutions are the engines of development.

Fábián et al. (2007) refers to the model of self-financed development. According to *Ficsor (2006)*, supporting innovation clusters has a key importance where the processing and manufacturing sectors cooperate with the scientific sector.

THE BOLOGNA PROCESS

The educational system of Hungary has significantly changed in the past decades. The minimum age of finishing studies has been raised from 16 to 18 years of age, 6 and 8 year-long secondary grammar school education has been operating since 1990, and in 1998, a programme called Accredited School System Higher Level Special Training was introduced (also referred to as ASSHLTT, since 2002 called higher level technical training). There have been fundamental changes in higher education, tuition fee, correspondence and distance education have become wide-spread. The concept of Life-Long Learning has become important, according to which the process of life-long learning assists the adjustment of human resources to the changing requirements of the economy *(Kelemen – Kollár, 2007)*.

When evaluating the present system, we must mention that in many cases the required and the offered qualifications are not always the same.

When introducing the BSc and MSc Programmes, specialists had several doubts. They are as follows:

- BSc Programmes of universities are less practice-oriented.
- The competitiveness of BSc degrees in the labour market is insecure.
- The suitability and adequacy of the curricula of BSc and MSc Programmes are not proved.
- As a result of student number changes, the personal and technical capacity of certain universities and colleges remain unused *(Magda et al., 2008)*.

The Bologna and Lisbon processes mean serious challenges to institutions as they include the reform of the structure of higher education. In changing the content of teaching and bringing it closer to the requirements of the labour market, career offices operating within the institutions could have a determining role. These centres would be able to complete the basically formal frameworks of education in order to make the students' chances better in the labour market.

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