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## **Closing the Education-Industry Gap**

### *Dual Education Programs in Business and Management in Hungary*

#### *I. Missions of Higher Education*

Higher education has a long history worldwide, and goes back to ancient times. The first universities in Europe were centres of learning and knowledge where professors (doctors and magisters) and students convened from nearby places and distant countries to live and study together. It is true that these societies (this is the original meaning of the word *universitas*) were organised like medieval guilds and needed royal “letter patents” or charters for their establishment, but have always been autonomous organisations, and more or less independent of outer interference in academic matters. And, more importantly, they have always enjoyed universal respect and prestige. The earliest universities and seats of learning in Europe date back to several centuries. Italy seems to be the first country in Europe to found an university: the University of Bologna was founded in 1088 and the word *universitas* was coined at its foundation. France came somewhat later with the University of Paris established in 1170. The Crakow University was founded in Poland in 1170, and the University of Pécs in 1367. The early universities were international centres of learning: at the renowned University of Padova – established in Italy 1222 – for instance – students gathered for study from 22 countries. In the Middle Ages Europe saw the birth of several universities: the best known ones are Oxford and Cambridge in Britain, Padova, Siena, Macerata, Naples in Italy, and Salamanca and Valladolid in Spain. According to *The Ranking Web of World Universities*, in January 2018 there were some 27 000 universities in the world <http://www.webometrics.info/en/node/200>. At present, in Hungary, we have 73 higher educational institutions (HEIs) [www.mrk.hu](http://www.mrk.hu), ranging from top research universities to minor colleges. Most Hungarian universities and colleges have extensive connections with other European HEIs, and many of them have gained international recognition.

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Higher educational institutions in the world, both universities and colleges, have a number of functions: apart from *education* and *research*, they also serve as *centres of knowledge and scholarly wisdom*. They also have to respond to the ever-changing *needs of society*, and provide educated and trained *workforce for the labor-market*. All in all they are creating and fostering *social, cultural and ecological sustainability*.

The European Higher Education Area, that Hungary is also part of, has identified a number of goals and tasks to improve the level of Higher Education and to facilitate cooperation between actors of Higher Education. Out of the numerous impacts and achievements we highlight here only three that we consider particularly important: increasing mobility – of students, of faculty and of staff; collaboration of academia, industry and research; and last but not least cross-border cooperation with institutions of Higher Education world-wide.

Hungary increasingly recognizes the importance of new imperatives in higher education: the importance of internationalization, as a base for global cooperation between higher educational institutions; the necessity to introduce new forms and methods of instruction – including digitalization as well as practice orientatedness; reliance on the concept of Lifelong Learning.

## *II. Changes and challenges in Higher Education in the 21<sup>st</sup> century*

### *1. Internationalization*

There have occurred several changes in higher education in recent decades world over that due to their intensity, impact and effects, might as well be labeled as paradigm shifts:

- Higher education (HE) has changed from the privilege of a rich and talented few to an option of development for many ambitious youth and has become available to a diverse and – in some countries even to a – mass audience. Participation in higher education is set to rise further.
- Due to the achievements and penetration of information technology and digitalization, knowledge and information have entered into easy reach to anyone interested.
- Internationalization has elevated from an „option-factor” to a „must-factor”.
- Amidst technological and scientific developments higher education is expected to play a critical role in lifelong learning.
- In countries facing demographic and economic changes higher education is playing a decisive role in maintaining economic and environmental sustainability.

As a consequence, with globalization on the rise, three important notions emerge that cannot be disregarded:

- higher education is also becoming global;
- nevertheless diversification of educational services (programs, profiles, and demands) is evolving;
- competitiveness (especially in maintaining and enhancing quality) is playing an increasingly important role in higher education.

We improve the internationalisation process by an increased exposure of our professors to international experience – who either lecture or make research abroad. We also increase the mobility of incoming and outgoing students. By year 2023 20% of all Hungarian students in Higher Education should ideally have international study experience. We also enhance the mobility of incoming students in diverse disciplines. This process is supported by state scholarship schemes from abroad. Hungary as a matter of fact has also developed a new scholarship scheme for incoming students, *Stipendium Hungaricum*- which is offered to students from diverse countries under bilateral government agreements.

We also see a great potential in international collaborative research research in the form of joint projects, joint publications, joint conferences – which is considered to be a most promising area of international cooperation in the future. Our academics and professionals are encouraged to benefit more from this potential.

## 2. Intensifying practice orientatedness

The contribution of higher education to jobs and growth, and its international attractiveness, can be enhanced through close, effective links between education, research, business and industry. The “Modernization Agenda of European Universities” launched by the European Commission in 2006 and revised in 2011 sets various goals to the development path of the higher education institutions (HEIs). It aims at improving the quality and relevance of higher education by implementing knowledge based education necessary for the economic growth and social development of the region. As a policy recommendation HEIs are encouraged to involve employers, industry and labour market stakeholders in the design and delivery of programs, and in general to make curricula include more on the site practical components.

Hungary as a member of the European Union and the European Higher Educational Area (EHEA) is making efforts to comply with strategic goals of the community. The area of research and development is one of the main incentives for the corporate world to support joint projects. Many higher education programmes are already subsidized by corporate actors, which not only support the success of the students on the labour market but also aide the implementation of the results of the research, which constitutes an important part of the institutions’ revenues. Apart from traditional and fruitful relations of Hungarian HEIs with industry and business in the field of research, of counseling, of internship-projects and of joint scientific activities, time has arrived to bring theory and practice closer also in tertiary education. The Hungarian government following a 2 year long pilot period (2012-2014) has undertaken huge structural changes in its higher education system („*Switching gear in higher education*”), which among others led to the adaptation of the German model of dual education with proper amendments to fit Hungarian needs (National Higher Education Act=Nftv.108.§).

### III. Dual education model

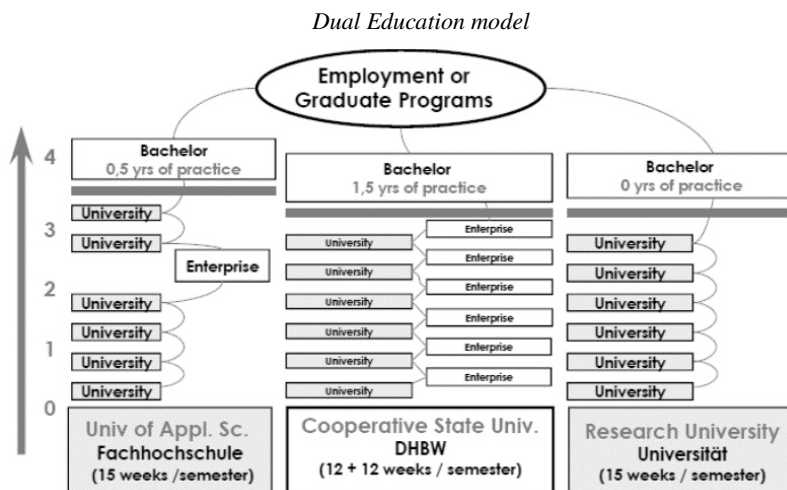
Dual education as such has great traditions in a number of countries (in Europe: Germany, Netherlands, Switzerland, Austria, etc. and for that matter also in Australia), but in most of the cases it is considered as a form of vocational training programs. But the Hungarian educational administration assumes that engaging business, industry and local governments in education can create exceptional synergy in higher education as well, enabling higher education institutions to follow rapid technological changes and advance new learning technologies.

Dual education programs in general aim at contributing to goals like:

- reducing drop-out rates,
- strengthening linkages between academia and business or industry,
- improving the quality of educational content by gaining up-dated input from industry,
- increasing private investment into higher education,
- providing students with soft-skills,
- providing students with professional knowledge and expertise,
- providing students with „social” capital,
- providing students with better employment opportunities.

Dual education proponents identify benefits for students (including motivation, career clarity, enhanced employability, vocational maturity) and employers (labor force flexibility, recruitment/retention of trained workers, input into curricula) as well as educational institutions and society (close connection to labor market, up-to-date content improvement, social cohesion, etc.) The terminology following the German model is „dual education” but what is meant is *cooperative education* in the sense that it is a structured model of combining classroom-based education with practical work experience.

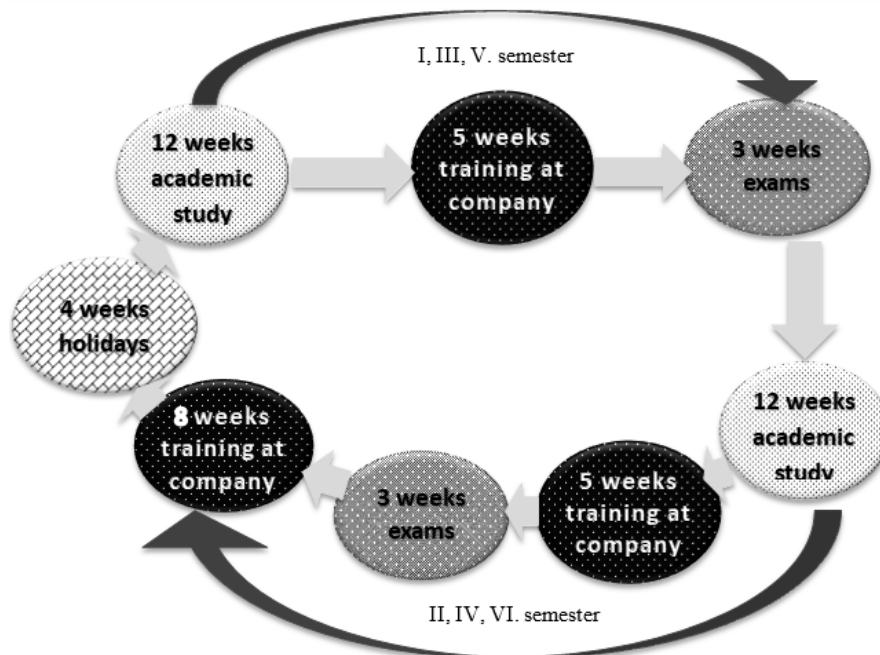
Chart 1.



Source: EMMI Felsőoktatásért Felelős Államtitkárság. SZIGETI ÁDÁM: *A duális képzés a felsőoktatásban*. 2015.

A cooperative education experience, a "co-op", provides academic credit for structured job experience. Cooperative education is taking on new importance in helping young people to make the university-to-labor market transition. Cooperative learning falls under the umbrella of work-integrated learning but is distinct as it alternates an academic term with a work term in a structured manner, involves a partnership between the academic institution and the employer, and generally is both paid and intended to advance the education of the student. The major objective is to strengthen the practice-oriented training in higher education. In doing so, by 2020, the number of first graders in dual education has to reach 8 % of all higher education first grade students.

Chart 2.



Source: EMMI Felsőoktatásért Felelős Államtitkárság. SZIGETI ÁDÁM: *A duális képzés a felsőoktatásban*. 2015.

It was professor József Berács, who gave a detailed account of the features of dual education<sup>1</sup> in Hungary, in which he highlighted the dual-education arrangement of Neumann János University with Mercedes in the city of Keckemét, and that of Szécsenyi István University in Győr with AUDI.

These good practices gave the impetus to the evolvement of the dual education regime in a number of practice oriented institutions. These institutions have offered in their earlier programs one-semester internships as a regular practice which as a rule

<sup>1</sup> BERÁCS JÓZSEF: *The models of dual education and its situation in Hungary*, in: *Hungarian Higher Education* 2016. chapter 7.

were spent at companies. Engineering programs fall into this category as well as business programs. In these programs dual education has been institutionalized as an integral part of the curriculum.

The Hungarian Government decided on the establishment of the *Dual Education Board* which consists of members of the Ministry of Education and representatives of the relevant companies, Chambers of Commerce, universities and colleges. The mission of the Board is to determine quality requirements towards dual degree education and programs. All programs have to undergo quality approval by the Board.

Each dual education program is based on a bilateral contract between the University and the company, which contains the method of recruitment, and the responsibilities of both partners as well as a curriculum plan.

#### *IV. Dual Education programs in Business and Management*

The initial idea of linking higher education programs with industry practice was mainly limited to fields of technology and engineering. But it did not take long to widen the scope of disciplines. It was soon discovered and acknowledged by educational experts and practitioners that the dual education initiative can work successfully not only in the traditional fields as that of technology, engineering, nursing, etc. but also in diverse areas of business and management. This tendency could be seen in practically all countries that introduced the model. If to look at the latest data of Hungary for instance, we can see, that according to the FIR academic year 2017-2018 spring semester OSAP statistics, the disciplinary distribution shows a varied picture.

Table 1.

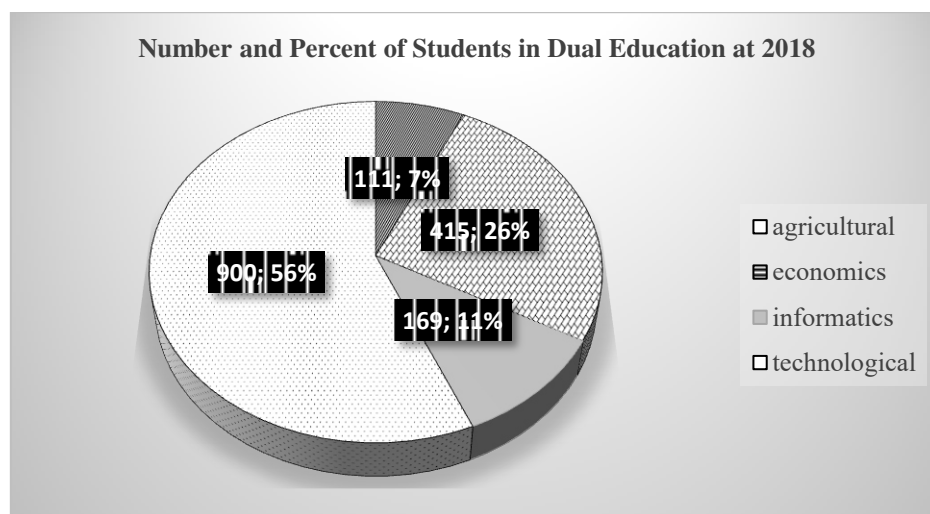
*Number of students in dual education program*

Field of study	Number of students in dual education program (spring semester 2017/2018)
agrarium	111
economics	415
informatics	169
engineering	900
Total	1595

Source: FIR

Chart 3.

*The ratio of students in dual education according to disciplines in Hungary  
(spring semester 2017/2018)*



Source: FIR

At first sight the total number of students involved in dual education programs might not look too high, but it should not be underestimated. On the one hand, it is constantly growing, as can be seen on the table below.

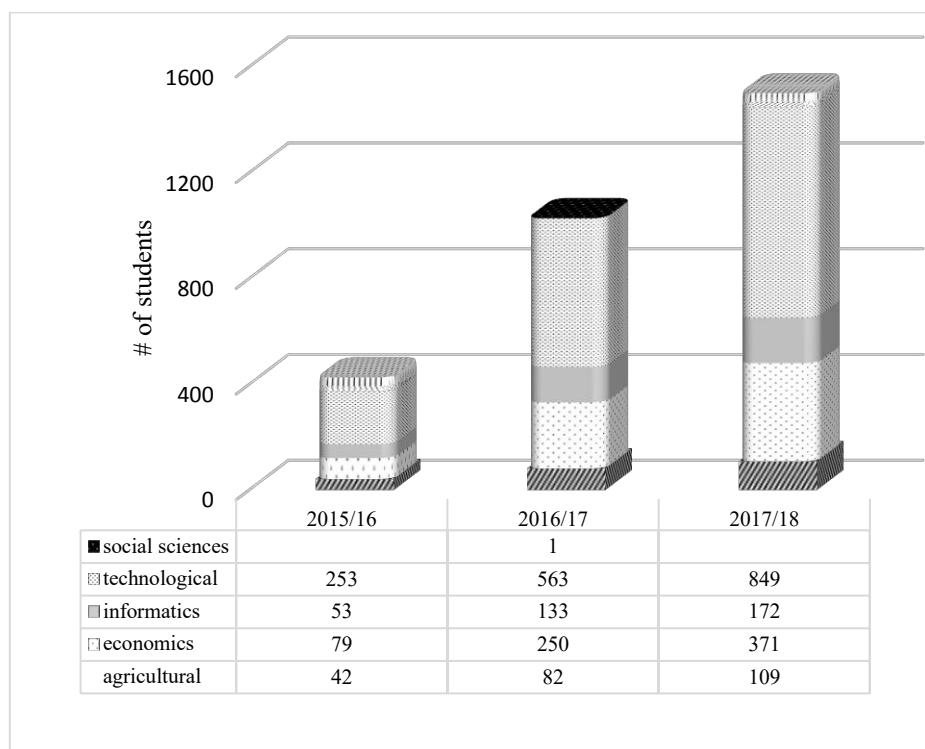
Table 2.

*Year by year distribution of students in dual education in Hungary*

Field of study	fall semester 2015/2016	fall semester 2016/2017	fall semester 2017/2018
agrarium	42	82	109
business and management	79	250	371
informatics	53	133	172
engineering	253	563	849
social sciences	0	1	0
Total	427	1029	1501

Source: FIR

Chart 4.

*Year by year Distribution of Students in Dual Education in Hungary*

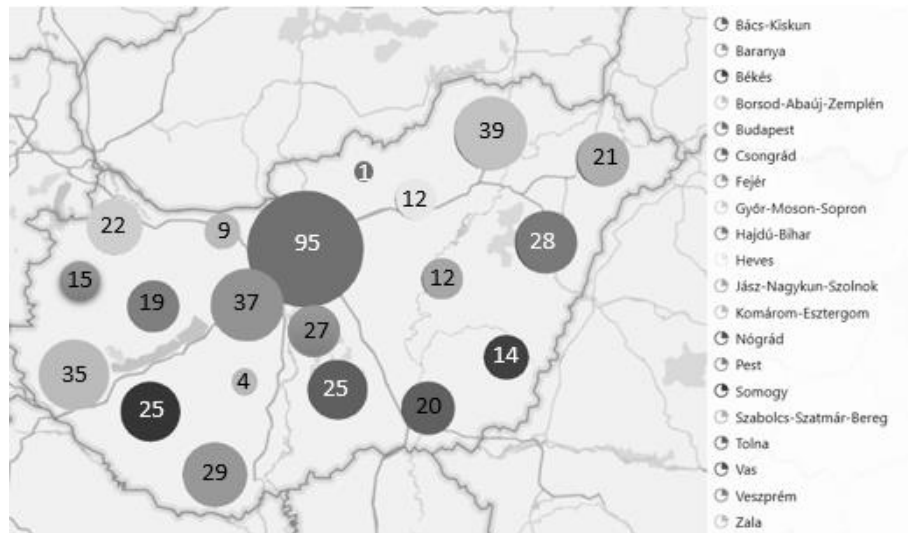
Source: FIR

On the other, in international comparison, the Hungarian data are quite promising. Suffice to remind, that in Germany, the number of students in dual education in the year 2004 totalled 3.300, whilst by 2018 it reached 92.000. This shows that it took more than a decade to evolve to the present status.

At present there are 16 higher education institutions in Hungary that offer dual education programs on BA/BSc or on MA/MSc level. The distribution of dual education programs according to the level of education varies in each institution, but the majority (near 90%) of the dual education programs are delivered on BA/BSc level.



Chart 5.

*Number of Enterprises in Dual Education in Hungarian Counties*

Source: FIR

*V. An example of good practice: dual education programs in Business and Management subject-areas at Budapest Business School*

Trade and Business education has deep traditions in Hungary: the first Commerce Academy – our predecessor – was established in year 1857 that is more than one and a half century ago. This is the second oldest Business School in Europe. There is a great variety of trade, business, tourism and management courses for domestic and international students on different levels and in different foreign languages – English, French and German, apart from Hungarian language. Budapest Business School – University of Applied Sciences (Budapesti Gazdasági Egyetem – Alkalmazott Tudományok Egyeteme) was among the first to adapt the dual education initiative and demonstrate that it can work successfully in diverse areas of business and management. With these goals in mind, Budapest Business School set out its dual-education strategic plan in 2014 by adjusting the Baden-Württemberg Cooperative State University model to its special legislative, economic and legal circumstances in accordance with the „Amendment of the National Higher Education Law July 2014” which outlined those higher educational institutions of Hungary engaged in engineering, informatics, agricultural, economic and natural sciences that have access to the introduction of dual education programs.

In the fall term of 2015/2016 academic year the first dual degree programs were launched at BBS. Cooperative Dual Education programs introduced in 2015/2016 academic year at BBS:

- Business Information Technology
- Commerce and Marketing
- International Business Economics
- Finance and Accounting
- Tourism and Catering

In the following academic year – 2016/2017 – one more program has been added to the running ones: Business Economics Management. We have 44 company and industry partners (composed of a pool of multinational companies, SME-s and local government administration) and intend to widen this circle by each year. In the BBS dual education programs phases of academic studies and workplace training alternate in three-month intervals. The aim of this initiative is the development and synergy of University-Business partnerships. The first contracts were signed with BOSCH and Siemens as companies who are ready to receive our students.

We expect from these constructions:

- constant and live connection of education and business;
- business and employers' needs can be easily transferred to the education content;
- students get on-the-spot practical experience;
- students gain up-to-date knowledge and develop required competences;
- acquired skills enable students to get easily employed...as one expert said: "we want not qualifications, but we want skills".

Gains for the industry side are also many-fold:

- industry sites are able to provide on-site training at an early age for the students;
- emphasis is on the development of students' skills and on shaping their attitudes to work;
- they are able to select the best would-be employees;
- increasing of industry competitiveness by having quality employees.

We also put great emphasis on blending internationalization with practice. Internships are getting increasingly internationalized by offering internships abroad or at multinational companies. Practice orientatedness goes hand in hand with the benefits of experiencing multicultural working environment. We encourage our students to take part in collaborative projects, in student competitions and in case-study projects.

Upon assessing the first outcomes of the programs, the overall feedbacks are positive. Expectations of this initiative have been fulfilled, although issues awaiting further clarification and regulation are also evident. We have to admit that the adopted approach may lead to a better fit of education and the labor market. With regard to the traditional structures we identify both advantages and structural weaknesses and suggest amendments – in terms of financing, legal protocols and several technicalities.

## VI. Tasks and Perspectives

As pointed out in their comprehensive study<sup>2</sup>, European education policy experts draw attention both to the advantages and the obstacles of the dual education scheme. The term ‘dual education’ is widely used as an umbrella term, referring to the fact that teaching and learning is characterised by ‘duality’ of learning venues, that is schools and companies, sharing the responsibility to provide theoretical and practical training. Each country is implementing this scheme according to the local needs and according to its local context – whereby several issues – financing, responsibility sharing, legalization processes, etc. might arise. It became also clear that harmonisation of responsibility sharing is one of the greatest problems – which in many cases leads to disappointment on the students’ side – who in many cases would require more attention and focussed guidance in order to develop.

The Hungarian experience is regularly monitored by educational authorities and professional training experts. It would be still early to draw final conclusions, but from the feedback so far it seems that this is an instant and effective tool to supply the job market with skilled and qualified employees.

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<sup>2</sup> Dual Education: *A bridge over troubled waters 2014* (by the Directorate-General for International Policies Policy Department B: Structural and Cohesion Policies Culture and Education).