

TRAINING OF TRAINERS. PARADIGM SHIFT IN QUALITATIVE HIGHER EDUCATION



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ABSTRACT

Nowadays there is a developing new model of higher education based on the triangle of Education – Research – Innovation however implementing the Knowledge Triangle requires major changes in educational practices. The aim of this paper is to present the current features of Hungarian higher education regarding the implementation of Knowledge Triangle.

Regarding Hungarian HE, the Training of Trainers is realized as a ground for paradigm shift. Traditional teaching methods should be restructured: new learning environment is based on a culture characterized by learning and working together and by research, development and innovation. Wide-ranging skills complementing formal education should be developed meanwhile education systems and curricula need to adapt to changing needs. Emphasis should be laid on skills as critical thinking, creativity, communication, user orientation, teamwork. High quality tertiary education systems are vital to recognize the essential role of universities in the innovation enterprise. Vocational education and training must be connected to the world of work.

As a conclusion: in the Hungarian HE research education is prevailing. This educational structure is not able to achieve a paradigm shift. Hungarian education sector is not open for the innovation and the national innovation system is not effectively supported. Teacher quality needs improvement (better initial selection). Both the initial and in-service training of teachers should be reconsidered since their openness for innovation is essential but it could be achieved by developing their R&D skills. The limits of R&D are constraints of the improvement of quality. Establishment of knowledge centers would contribute to the renewal of teacher trainings and would foster knowledge exchange. Hungarian educators in the higher education usually run short of well-tailored pedagogical and methodological skills so renewal of teacher training, further training of educators would definitely lead to a better quality education.

Keywords

Innovating teacher's training; quality improvement; paradigm shift: andragogy-pedagogy

INTRODUCTION

The 2000 Lisbon European Council identified knowledge as the key to future growth, jobs and social cohesion in the EU. Education and training are a prerequisite for a fully functioning "knowledge triangle"(education – research – innovation). Member States and the EU institutions need to use evidence-based policy and practice¹, including robust evaluation instruments, to identify which reforms and practices are the most effective, and to implement them most successfully. The 2006 Spring European Council Conclusions² stressed the need for an evaluation culture, and the more systematic use of evidence as a basis for the modernisation of education and training systems.

Education and training have a critical impact on economic and social outcomes. Ineffective, misdirected or wasteful education policies incur substantial financial and human costs. It is therefore essential that investment in education, which amounts to 5.5% of GDP⁶ or € 500 billion each year, is as efficient and effective as possible. Improving the use and impact of knowledge for developing policy and practice at the national and EU levels would improve the quality and governance of education systems. Furthermore, nowadays there is a developing new model of higher education characterized by a higher responsiveness to the demands raised by the information society and knowledge-based society. Universities are aware of the fact that lifelong learning even more tends to be a priority, which is somehow manifested in their institutional strategies.

Universities with LLL strategies take more active part in regional development; they are more open and flexible regarding their educational strategies. These universities act upon the socio-economic environment of higher education and they respond to the challenges and opportunities of learning environment in a more sensitive way. Smidt and Sursock³ highlight in their EUA publication that the progression of universities toward developing an overarching LLL strategy and the implementation of relevant activities follow a three-stage sequence: an adaptation stage, an organisational stage and a cultural stage. Therefore the realization of LLL is not enough any more, because it is only manifested by the level of adaptation, but the systematic adaptation on behalf of the universities is still missing, although it should be an important stage in order to reach the cultural stage. For universities to reach this stage, it means that they should have adopted a new way of thinking, a new institutional "culture" where all education is viewed as a contribution to lifelong learning. This also means that universities have developed a shared vision of LLL across the institution that engages all staff and that they have adopted a clear perception of responsibility for supporting the individual students to achieve their best. The learners are at the centre. According to OECD surveys⁴, research and innovation together should be in the centre of mission of the universities in the 21st century.

¹ European Commission: Towards more knowledge-based policy and practice in education and training. COMMISSION STAFF WORKING DOCUMENT, SEC(2007) 1098, Brussels, 28.08.2007.

² Presidency Conclusions, Council of the European Union, 7775/1/06, Brussels, 18 May 2006

³ Sursock A, Smidt H: Trends 2010: A decade of change in European Higher Education, Responding to the challenges of lifelong learning, widening participation and access, ISBN: 9789078997177, EUA Publications, Brussels, 2010.

⁴ The OECD Innovation Strategy: Getting a Head Start on Tomorrow, Key Findings (pdf), OECD, 2010.

1. QUESTIONING THE ROLE OF TRADITIONAL UNIVERSITIES

According to Ellen Hazelkorn⁵, studies reveal that there is a strong correlation between educational attainment and the social and economic advantages for individuals and for society. Students are becoming more diverse, forcing higher education institutions to respond to a diverse range of global, national, regional and local stakeholders and ensure value-for-money. The role and mission of higher education is under the spot-light. In response, governments try to reshape/restructure higher education systems and institutions to ensure they can better compete. In the case of traditional universities the mission and role of higher education and academic research is distinct from commercial activity. Nowadays the idea of university as such is changing due to several factors. Higher education institutions traditionally reflected a simplistic understanding of knowledge creation, different social classes and labour market requirements. Today traditional universities are unable to meet all the demands and requirements of the global knowledge society. Academic knowledge production and innovation will lead to economic growth. Therefore there is a real need for a new model of higher education which requires the reshaping of the traditional universities.

1.1. Beyond the Campus Wall

There is an increasing emphasis on social responsibility and public accountability of higher education and the academic profession. The political and societal support for higher education, for systems dependent upon public funding and on tuition fees can only be maintained by quality profiling, performance enhancement and value-for-money. Higher education has been poor explaining the importance, value and benefit of university to society. A greater diversity of learners and stakeholders is present, alongside the realisation that labour-market needs will require continual learning and knowledge exchange. The battle for world class excellence is intensifying at a time of fiscal crisis and rising costs. Building on the Knowledge Triangle model of innovation, higher education is required to respond more directly to social and economic needs. Different programmatic models and initiatives are emerging which bring together actors from civil society, the state and state agencies, and higher education to mobilize and harness knowledge, talent and investment in order to address a diverse range of problems and need through coordinated action. Sustained, embedded and reciprocal engagement is defined as learning beyond the campus walls, discovery which is useful beyond the academic community and service that directly benefits the public. New boundary crossing organizations and structures are being developed to help negotiate the pathways and different cultures.

1.2. The Changing Idea of the University

The university can be an important connecting site for society, but it needs to engage directly and pro-actively rather than sitting on the sidelines. Universities can make a multifaceted contribution to the economy, as a source of knowledge and skilled employees, and as the centre for regional economic clusters. New kinds of universities, boundary crossing organisations are needed that promote and embed the partnerships with the community, industry and government. Universities have to leverage attributes of mission and place to differentiate. It is a challenge to connect up the three sides of the Knowledge Triangle. Universities have to take a lead in socially-robust knowledge in the same way older

⁵ Hazelkorn, Ellen, (2010) *Teaching, Research and Engagement: Strengthening the Knowledge Triangle*, Presentation to EUA SIRUS Conference, Vienna, Austria, <http://arrow.dit.ie/cseroth/26/>

universities dominate disciplinary research. They have to create competitive and distinctive advantage by building critical mass in key fields of research-informed teaching and use inspired research, which is socially and regionally engaged and globally embedded. Also the key is building collaborative knowledge clusters with other institutions and the wider community that occupy the distributed knowledge production system. A broader definition of academic activity is needed to embrace the breadth of Knowledge Triangle, including recognition of research “beyond academy”. Policy has to be aligned with assessment and recruitment practices by developing appropriate incentive and reward systems to support and incentivize the production of socially robust research. A new model of higher education is needed. What should it place into the focal point to comply with the demands rose by the knowledge based society of the 21st century? The new model of higher education is the triangle of Education/Learning – Research/Discovery – Innovation/Engagement. Higher education is no longer the sole provider of new ideas or innovation, rather research is conducted increasingly through bi-lateral, inter-regional and global networks, with interlocking innovation systems because complex problems require collaborative solutions.

2. KNOWLEDGE TRIANGLE AS A SOLE OPTION

A particular challenge for universities stems from political decision-making that requires significant results in the near term. Universities, as their operational structures and culture exist, are not yet ready for this. Huge development work is imperative for universities to be able to change their own operational processes. The key stepping stone is the disassembly of silo structures and accomplishment of an in-depth collaborative working culture. This can be simplified by means of two principles: the Triple Helix collaboration model (universities-enterprises-public administration), and the Knowledge Triangle model (research-education-innovation) that accentuates the synergy between university’s different functions needs to gain ground. According to the key statements of the Swedish EU Presidency Conference “Knowledge Triangle Shaping the Future Europe”⁶: European higher education institutions should play a central role in the Knowledge Triangle interactions by creating and disseminating knowledge valuable for society and businesses as well as by linking education, research and innovation through collaboration with the wider community. The concept of the knowledge triangle relates to the need for improving the impact of investments in the three activities – education, research and innovation by systematic and continuous interaction. Higher education institutions must be given a central role in building a Europe where the impact of knowledge building can be measured in terms of social and economic progress.

2.1. Cornerstones of Knowledge Triangle

Again reflecting on the OECD survey called *Strategy Proposal*, the principle of Knowledge Triangle is to create synergy between research, education and innovation. It also demands collaboration among the organizations of both the public and private sector. Increasing collaboration requires more communication and mutual understanding between the stakeholders. Communication and cooperation are equally important from this perspective. It is evident that collaboration between different parties according to the Knowledge Triangle model, i.e. universities, enterprises and public sector, has to increase in order for innovations and new ideas to be generated. Shared goals are essential as well as the proper definitions of such ambiguous concepts as for instance “innovation”. Shared goals, shared language

⁶ The key statements of the Swedish EU Presidency Conference “Knowledge Triangle Shaping the Future Europe” (organised in Gothenburg Sweden 31 August – 2 September 2009)

and shared understanding are the cornerstones of both Knowledge Triangle and innovation. Regarding these, dialogue as such has crucial importance, because it is needed to facilitate understanding and to avoid misunderstandings. These shared goals are important to reach effective innovation. However, innovation implies change, which is inevitable and should be stressed, because there is a real need for innovations. It is essential that innovation and research are connected to the real life in order to get results that are valuable for people, society and industry. This requires collaboration, cooperation as well as suitable funding. The existing structures are barriers for innovation, therefore new, systematic innovation needs more systematic, more organic systems and there is a demand for flexible amoeba-like formations. There is also a need for physical as well as virtual environments where the actors of the Knowledge Triangle model can come together. These environments or hubs would support the collaboration, dialogue and both the national and international cooperation. To support innovation more focus needs to be on quality, especially encouraging potential breakthrough initiatives. Implementing the Knowledge Triangle requires major changes in educational practices, where the process of cross-fertilization should be emphasized. In this way, students and professionals from companies should be brought together to learn from each other. As for the Hungarian higher education, the Training of Trainers is realized as a stepping stone for paradigm shift.

3. TRAINING OF TRAINERS

The beginning of the 21st century brought not only numeric changes, signified by the change of 2 to 1 in dates, in the history of pedagogy. The new century began with significant changes in attitude in the educational science. The paradigm changes in the process of lifelong learning and teaching have to be defined and interpreted in order to achieve the goals. Attaining a world-class quality education one needs to have quality and professionally trained teachers in educational technologies too. Teachers must be given the chance for assessing their current knowledge and for further training themselves in this field based on their needs and demands. Achieving these goals requires the establishment of a new teaching/learning culture, with new teacher roles and methodologies for assisting the process from education to self-directed learning.

The trainings organised within the frames of the project „*Training of Trainers at the University of Technology and Economics*” provide significant contributions to the reduction of those missing trainer competences that are necessary for the implementation of the requirements of the Bologna-process, the European Qualifications Framework and the LLL strategy. These trainings were based on the institutional demands and requirements of BME that were measured in the previous year within the frames of a survey. These trainings are suitable for flexibly following the internal training demands and also for training participants to fulfill the competency requirements of the teaching profession, to be prepared for the challenges raised by the teaching-learning process, to learn how to learn. The general (strategic) aim of the project is contributing to the reduction of those missing trainer competences that are necessary for the implementation of the requirements of the Bologna-process, the European Qualifications Framework and the LLL strategy. The direct aim is the improvement of teacher competences in different fields through a variety of trainings based on internal demands.

The Education and Training 2020 programme⁷, which is a practical document for defining and assisting the achievement of the most important medium-term educational policies, has the main aim of improving the quality and efficiency of educational and training systems. The EU policies focus on the aspiration of organizing learning communities for teachers, quality teacher training, the questions of standards and competencies, motivating teachers for further training. These aims all appear in our project. The aims of the project, the trainings for the development of teachers' competencies are directly connected to the activities defined in the SROP (Social Renewal Operational Programme).

The internal training, conducted between 2009-2011, was supported in the framework of the Social Renewal Operational Programme (Társadalmi Megújulásért Operatív Program, TÁMOP) 4.1.2-08/2/C/KMR – 2009 - 0005. The number of participants was 358. The goal of the training was to enable teachers, researchers in higher education institution to teach courses of the highest quality and efficiency both in Hungarian and English. It allowed participants to assess their knowledge and to improve their competences.

The free trainings of a limited number of participants, organized with the framework of the project, provide the participants knowledge and competences that enable them to make competence-based curriculum development, to apply adequate teaching methods and to use systems that provide individual, open learning ways. Involving partners in the implementation of the project made it possible for them to assist in the execution of the project, to support the validation of horizontal and environmental sustainability aspects with their professional expertise and knowledge.

3.1. Target groups for development, stakeholders, impact area for development

The surveys carried out before the preparation of the project had the aim of mapping what kind of easily identifiable, clearly definable homogeneous groups would be directly and indirectly effected by the project. The attitude of the groups towards the project (the strength of the support) and the need for the implementation of the project had to be analysed, as well as the methods of dealing with the risks caused by the resistance and passivity of the group.

The analysis was an opportunity for thinking over the ways of strengthening the current approach of target groups towards the project: making the currently indifferent medium into a supportive one and turning the supportive group into a more supportive medium. The survey was realized in several steps with diverse methodology as the target groups could be accessed through different communication channels. The survey and the analysis were realized in January-February 2009, in the preparatory stage of the project. In the first stage of the survey the target groups were defined. Our main aspect was to form easy-to-handle and homogenous groups which have fairly homogenous opinions and attitudes towards the project that can be formed with communication tools. After defining the target groups we were able to determine which segment is effected directly and indirectly by the project.

⁷ The Council of the European Union: Council conclusions of 12 May 2009 on a strategic framework for European cooperation in education and training ('ET 2020'), (2009/C 119/02), http://ec.europa.eu/education/lifelong-learning-policy/doc28_en.htm

The definition of stakeholders occurred in workshop where we could define the following well-distinct, homogenous groups:

Directly effected target groups:

1. Teachers involved in the different professional trainings
2. The members of the project management team working on the implementation of the project

Indirectly effected target groups:

1. The leadership of the faculties involved in the project
2. The students of the faculties involved in the project
3. Enterprises and persons taking part in the development process
4. People addressed by the dissemination of the project results

Background: The realization of the project was mainly defined by the surveys of the European Union and the NETTLE project, and on the other hand the local distinctiveness and capabilities supported by a needs assessment.

3.2. The main indicators of the assessment

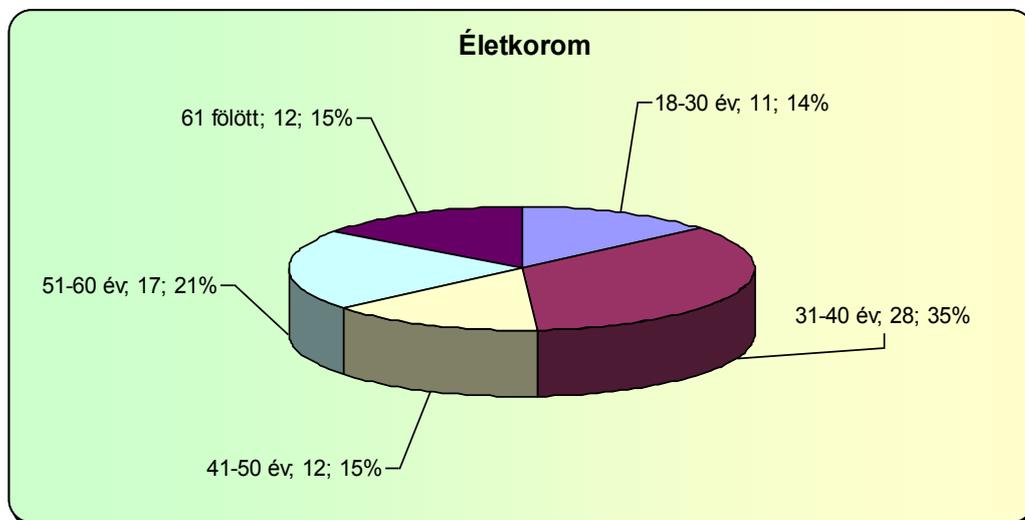


Figure 1. Age

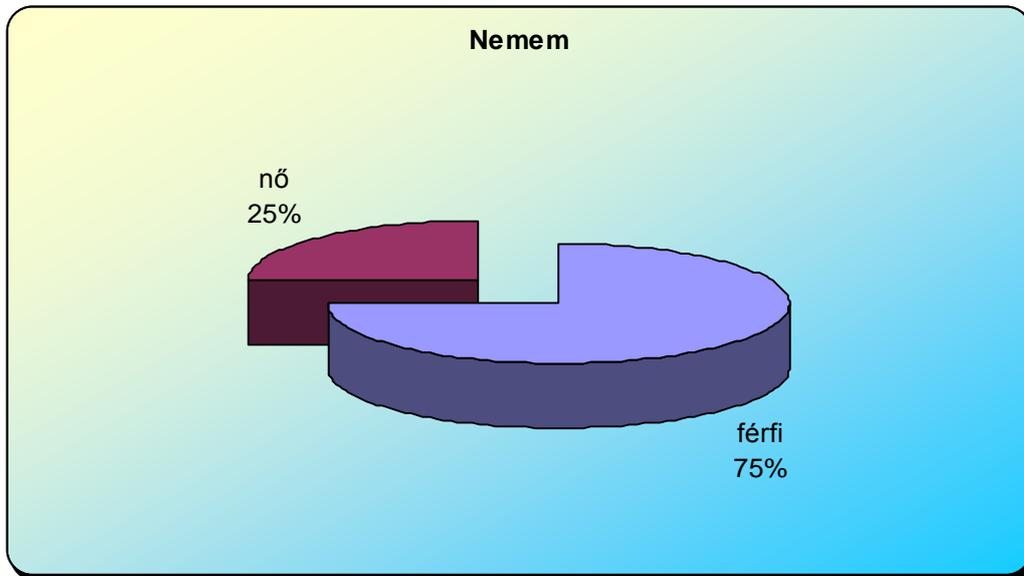


Figure 2. Gender (female: 25%, male 75%)

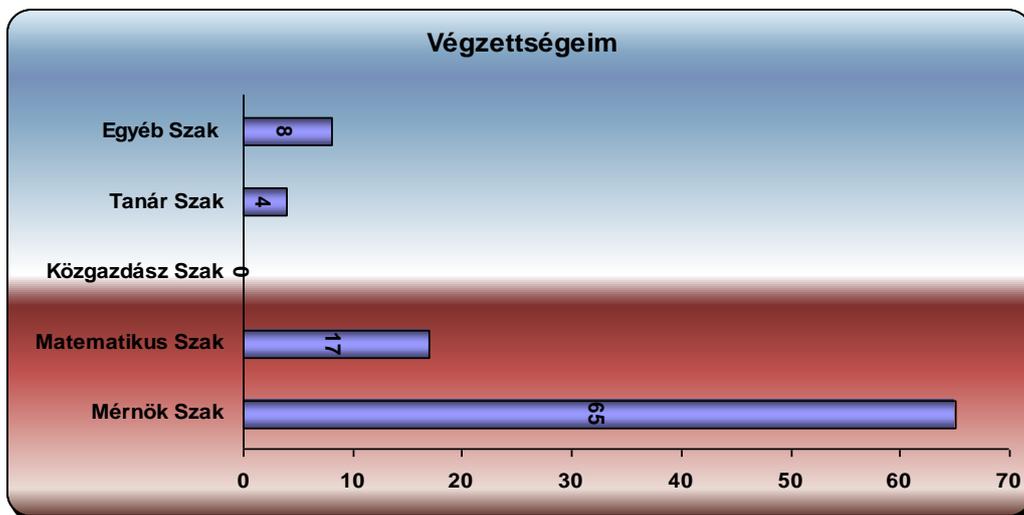


Figure 3. Qualification (Other, Pedagogy, Economics, Mathematics, Engineering)

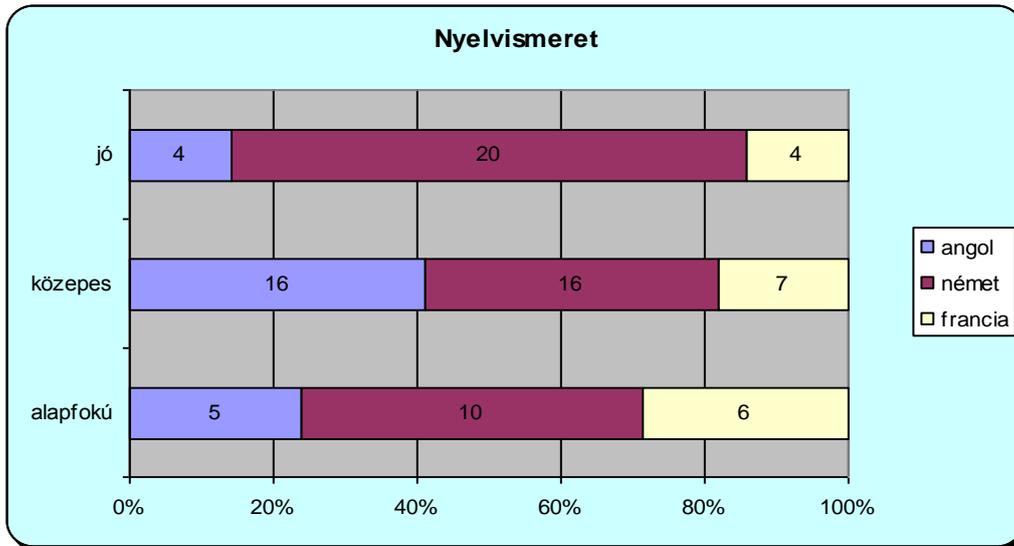


Figure 4. Language knowledge (Good, average, basic – English, German, French)

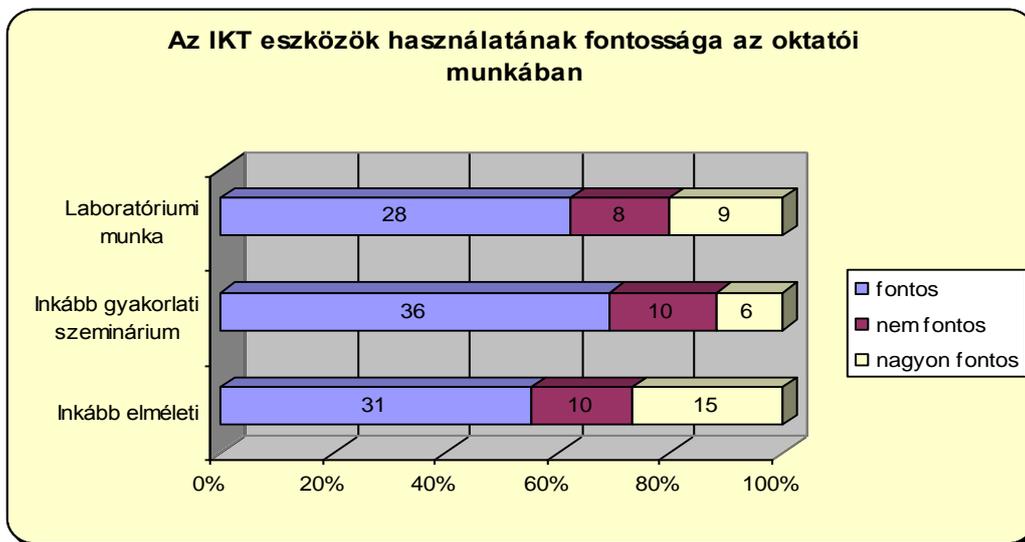


Figure 5. The importance of using ICT tools in teaching (Laboratory work, Practical seminar, Theoretical – Important, not important, very important)

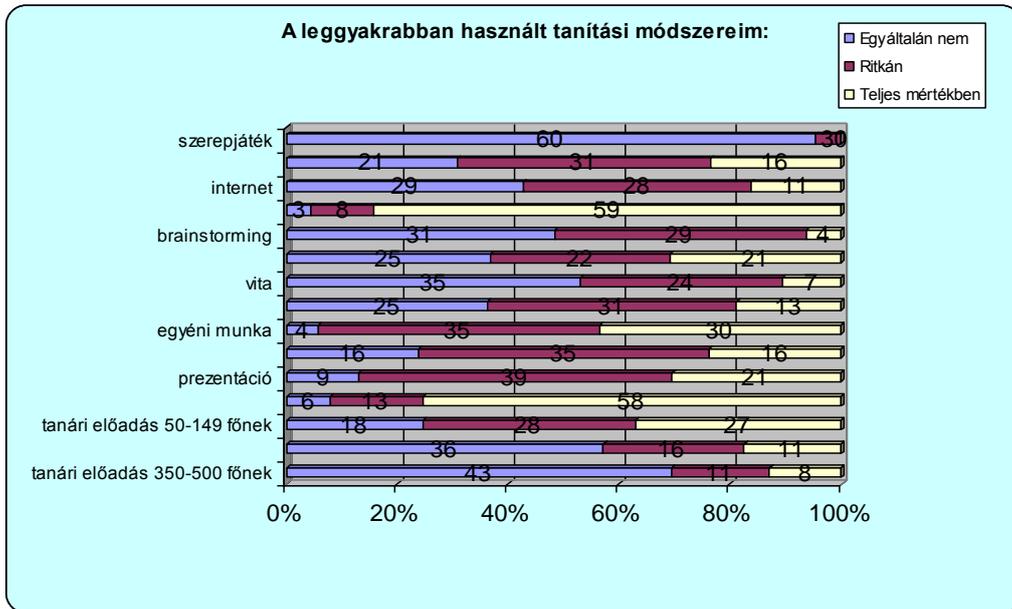


Figure 6. My most frequently used pedagogical methods (Roleplay, internet, brainstorming, discussion, individual work, presentation, lecture for 50-149, lecture for 350-500)

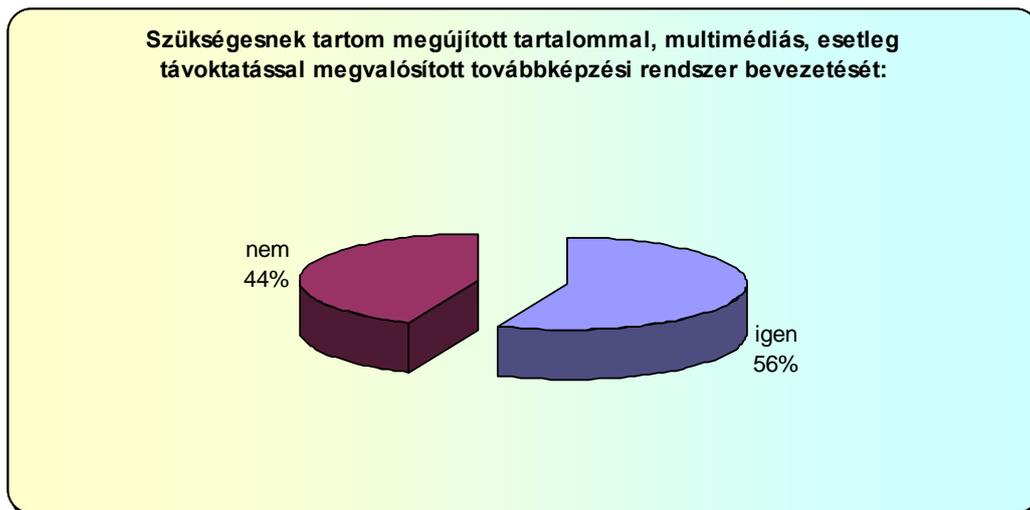


Figure 7. The necessity of introducing a further training system (with new content, multimedia or distance learning methods)

The main indicators of trainings in the project based on the needs assessment:

	Title of the training	Training period (hour)	Number of training groups
1.	Methodological training	56	2
2.	Intensive English professional language training	60	2
3.	English professional language training course	120	3
4.	Programme on labour safety in higher education	24	8
5.	E-curriculum development training	120	1
6.	Training for tutorial tasks	48	1
7.	Digital competences in teaching	20	2

Table 1. The main indicators of trainings

3.3. Implementation of the training project

The professional content of the project is connected to the following fields:

1. knowledge of pedagogical methods
2. using ICT tools, methods of educational technology
3. improving professional language knowledge
4. occupational safety trainings

The description of the training programs:

1. Training in methodology

The goal of this training was to train teachers in higher education about curriculum development related to teaching and learning, field-specific methodology and basic communication and presentation skills applicable in teaching. The training drew heavily on models, case studies and best practices.

Planned duration: 68 classes, of which 56 are contact classes, 20 are for theory and 26 classes are for practice.

2. Professional language course (English)

The goal of the training is to develop foreign language skills of teachers/instructors in higher education, to develop and strengthen adequate language learning strategies which support a proficient use of foreign languages in the course of their work.

Duration of training: 120 classes (145 weeks), 60 contact classes

3. Intensive language course (English)

The goal of the training course is to enable participants to develop and improve their own curricula designed for their courses (lectures, teaching practice, written materials). To this end they receive individual support and feedback in light of international experience.

Duration: 60 hours (6 weeks), 35 contact classes of intensive language course.

4. Programme on health and safety in higher education

The goal is to enhance the knowledge of teachers/instructors related to health, safety at

work. The training course consists of 6 training sessions conducted in small groups.

5. Digital competences in teaching

The goal, on the one hand, is to introduce new paths in training and education as a result of the Web 2.0 environment through a presentation of the most up-to-date ICT tools, and to enable participants have adequate practice in using these tools. On the other hand the training course seeks to explore ICT-supported learning environments of atypical learning forms.

Duration: 20 classes, including theory and practice, using blended learning

6. Preparation for developing E-curriculum

The training course is recommended for those who would like to get an introduction into the concepts of distance learning and the curriculum development methods of open training.

Duration: 120 classes, 0 contact class, distance learning, 3-6 months

7. Tutoring

The goal of the training course is to train people with experience in teaching for providing tutoring in distance education. Participants in the training learn about the basic concepts of distance learning, the support system for individual learning, models in tutoring, methods of keeping contact with learners, methods of monitoring individual learning, control methods, as well as the goals of consultations, individual and group-based tutorials.

Framework: 48 classes (8 weeks), 1 contact day (8 hours) on the 4th or 5th week, depending on the group's needs.

	Training	No.
1.	digital competences in teaching	22
2.	general methodology	37
3.	area specific methodology	25
4.	English language course	106
5.	E-learning	10
6.	tutoring	10
7.	health and safety	80
8.	professional English, intensive	68
	Total	358

Table 2. Number of instructors/teacher participating in the programmes - by training type and positions

	Training	Number of participants
1.	Digital competences in the teaching activities	22
2.	General methodology	37
3.	Professional methodology	25
4.	English professional language training course	106
5.	E-learning	10
6.	Tutoring training	10
7.	Work safety training	80
8.	Intensive English professional language training	68
	Total	358

Table 3. Distribution of teachers participating in the trainings

Position	Number
University professor	3
Associate professor	35
Senior lecturer	50
Assistant lecturer	35
PhD student	15
Scientific staff member	24

Table 4. Position of teachers participating in the trainings

Characteristics of shorter training programmes:

- Internal training
- took place in 2009/2011 with support from the Human Resource Operational Programme
- number of people trained: 358
- ECD certificates issued at the end
- extensive previous communication to inform colleagues of the programmes offered
- blended-learning, relying on traditional classes and electronic learning environment (Moodle)

In the third phase of the project: Cooperation with the Finnish Oulu University on professional English language course.

Priorities of the methodological developments in training and education:

- developing up-to-date, modular and competence-centered methods and curricula, as well as programme systems, methods and curricula which support individual learning and open learning

- comprehensive modernization of training and further/continuing training of trainers/trainers to enable teachers/trainers acquire skills and competences, as well as methodological and substantial knowledge which allows them to successfully transfer updated content in the spirit of lifelong learning.

The programme has 3 units. The basic unit (5 credits) is announced annually. It consists of 5 modules and focuses on the following 3 areas:

- forms of learning and teaching ("how" and "in what way"), methodological exercises (a comprehensive assessment and analysis of the teaching activity)
- learning environment facilitating higher education,
- 2-day groups sessions are organised 3 times. The first session would take place in September, the second in December, the third in February/March.

In addition, every other year teachers can freely choose smaller units/modules as well, encompassing a wide variety of subjects. The modules take up 2-3 days. After their completion, participants have the possibility to enrol in the following shorter modules (10 hours):

- the basis of the theory of education, forms of learning,
- teaching- learning, curriculum development,
- the development of competence-based, modular training programmes,
- competences necessary for lifelong learning,
- principles of presentation and techniques of practice,
- the development of e-learning curricula,
- best practice - international case studies of teaching modernization,
- assessment and evaluation of learning,
- teaching and engineering competences,
- the application of electronic learning frameworks in teaching.

Project-closing event

On 20 April 2011, a research university workshop was organized with the topic of *"The Role of Higher Education and Research Universities in the 21st Century"* with the support of the Embassy of Finland at the Rector's Board Room at Budapest University of Technology and Economics. The invited participants were the leaders of the University, among them deans, vice-deans, directors, and the heads of departments of the colleagues that took part in the "Training of Trainers at the BME" project. As part of the programme the certificates of the "Intensive Language Course" accomplished within university of Oulu the "Training of Trainers" project were handed out to the 20 successful participants working in the university.

3.4. Summary, suggestions and recommendations

Summarizing the whole project we can say that in case of participants who successfully completed the studies the training fulfilled the expectations, namely the curriculum formulated in the project proposal was delivered to the participants, and important skills were improved in professional foreign language learning usage. The professional and language competences of the participants can be strengthened in the daily usage, as the training offered a chance for both the formation and the practice of these skills.

Feedback from the participants:

Please characterize the training program in a few words!

We have received many interesting information about teaching, writing articles and giving presentations.

It was great. I have learnt a lot.

It delivered high-quality knowledge that can be well-applied both in theory and practice.

It was a well-thought out, well-prepared, well-conducted and useful training.

4. HUNGARY: RESEARCH UNIVERSITIES STILL IN FOCUS

The Knowledge Triangle - i.e. synergy between research and education and innovation - focuses on the system or a systematic approach. The Knowledge Triangle also implies a paradigm shift. The biggest challenge for the European Union is to adopt a much more strategic approach to innovation. Europe needs to develop its distinctive approach to innovation in which universities are having a key role manifested by the Knowledge Triangle. To reform the research and innovation systems it is crucial to focus on regional innovation ecosystems, to foster young entrepreneurial mindset and to develop new culture of working and learning together. The future is based on knowledge triangle, just as Martin Schuurmans has put it⁸: "innovation requires an integrated knowledge triangle". Therefore actors in the Knowledge Triangle are at the core of the innovation web, meanwhile enhanced capacities, high degree of integration and leadership are prerequisites for scaling up Europe's innovation performance. As for the future, the Knowledge Triangle is the dominant, determining factor. In this sense it replaces the concept of lifelong learning, because the Knowledge Triangle results in structural modifications and reshapes the role of the universities in the 21st century.

Concerning the Hungarian higher education we can say that research education is prevailing. In 2010 five universities were awarded with the title of Research University. However, this kind of educational structure is not able to achieve a paradigm shift in connection with defining the role of the universities in the 21st century. In Hungary the focus is still on the research, thus the research universities are in the foreground. Research universities are the ones that receive most of the funding: although R&D&I are indispensable part of the Knowledge Triangle, research universities mainly focus on the research part in this way they cannot identify the role of the universities in the 21st century. At present, the characteristic features of higher education are both the learning society and knowledge-based society which is accompanied by a decreasing demography and ageing society. For this reason it is obvious that the role of the higher education should be reconsidered. There are some approaches to this, let us think of SIRUS and the 10 theoretical point of the EUA⁹. It is revealed by the Finnish example (the so called Aalto concept) that the future is for the merging universities which put the research and practical knowledge into the focus. It is necessary to integrate research into practice. As the Aalto President Tuula Teeri states¹⁰ in

⁸ Markku Markkula: Impacts of ICT on Lifelong Learning and University-Industry Cooperation (Power Point presentation), EUGEN workshop, 20 September 2010

⁹ European Universities Association (EUA): European Universities' Charter on Lifelong Learning, ISBN: 9789078997009, Brussels, 2008, http://www.eua.be/fileadmin/user_upload/files/Publications/European_Universities_Charter_on_Lifelong_learning.pdf

¹⁰ Markku Markkula: Europe 2020 Strategy Challenging Universities: Lifelong Learning and Knowledge Triangle (Power Point presentation), 7. National Hungarian and International Lifelong Learning Conference, 21 April 2011

her speech “*Research and expertise are the most important sources of, and preconditions for, innovation. [...] The diversity of innovation relies on a strong research base as well as other factors, such as a climate and ways of working that encourage innovation creativity and the ability to take risks*” (Markkula).

5. BARRIERS OF THE HUNGARIAN EDUCATION SECTOR RESEARCH, DEVELOPMENT AND INNOVATION SYSTEM

Hungarian higher education is characterized by high level of decentralization, with schools as largely autonomous units. Furthermore it faces the pressures of demographic change and falling school headcounts. Frequent changes in responsibilities for different fields, e.g. adult education and Vocational Education Training as well as the absence of mechanisms for policy evaluation and dissemination also characterize the Hungarian higher education. Active private sectors are present in education-related services; however the system of higher education governance remains highly traditional. Currently the links between higher education and labour market agencies are evolving but still underdeveloped. Funding as such is not in a well-developed state: a very significant role is played by EU funds in supporting change in education, but taking resource away from the system’s natural functioning. Moreover, information and knowledge flow between sectors is not well-developed.

5.1. Critics articulated about the Hungarian Education Sector

According to *Strategic Proposal* one of the main critics associated with the Hungarian innovation strategies is that the Hungarian education sector is not open for the innovation. It is a main problem since a sector which is not open for innovation can hardly support the national innovation system adequately. However during the last decade the EU funds restructured the links of the Hungarian National Education Sector Innovation System, hereafter referred to as NESIS, and development policy. EU funds are reshaping factors posing challenges for innovation in the education sector. What can be said about the current Hungarian research sector? While the participants of Hungarian NESIS on the one hand characterized by high activity, openness for innovation and international embeddedness, as well as the lack of cooperation, the isolation of different institutional spheres and sharing knowledge at the low level. They also reveal the scarcity of human resources R&D&I as well as a serious lack of knowledge or an insufficient quality of exploitation of knowledge in some important fields. Stakeholders should take an active role, which is not the case currently.

6. RESHAPING HUNGARIAN TEACHER TRAINING

Instead of research universities the future belongs to the so called engaged universities, among other things this postulate a systematic restructure within the Hungarian higher education. However, it is evident that to be able to respond to the challenges of the 21st century knowledge based society, the Hungarian teacher training also needs renewal. As for the educators’ skills, it is quite clear how far our national strategy is from the acceptable European standards. It is generally agreed that Hungarian educators in the higher education usually run short of well-tailored pedagogical and methodological skills. Whenever a position is tendered, the prerequisites are usually of professional (required period spent in higher

education, the knowledge of at least one foreign language, the number of publications) but no expectations are set in connection with pedagogical and methodological competence. Only tutors participating in non-subsidized trainings have some experience in teaching adults with problems concerning adult education. Holding lectures and leading seminars are frequently the accepted forms of education, and no real efforts have been taken so far to initiate more practice-oriented field work, only when it is a compulsory part of the major. Renewal of teacher training, further training of educators would definitely lead to a better quality education. The following criteria should be met: Further training programme alternatives of adequate quality and quantity should be provided for tutors in higher education, specifically targeting their professional, research and language skills, laying special emphasis on the new training structure set forth by the Bologna Process as well as developing the range of foreign language courses and expanding the research capacities, etc. The following would also be of similarly importance: organization of further training courses for a broad range of teachers in the fields of school organisation and education management, career counselling, spare time organization, adult education and foreign languages; furthermore gaining the necessary knowledge to perform enhanced participation of tasks related to general education.

CONCLUSIONS

At this stage of the research the results are best summed up by the University of Twente in The Netherlands, which I should like quote as conclusion: *"The university expects its traditional population of mainly 18-30 years old students to change to a more heterogeneous population that stretches from 18 years old freshmen to senior students that are 'learning in later life' and various types of students between them. A growing number of students will have working experience, or wants to combine work and education. This asks for more flexibility in study programmes, effective admission procedures, new techniques of e-learning, different types of assignments, assessments and so on. The university has many building blocks for LLL and Continuing Engineering Education, but these blocks do not fit very well together. The bricks are there, but the building still has to be built."*

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