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The impact of effective process of higher education on the quality of human resources in the Czech Republic

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Abstract

The global economic recession with deepening regional and professional dissonances is significantly reflected on the labor market opportunities. University graduates, who should get the attention, are at the forefront. Within the labor market, typical for its constant transformation, preferred and employers' (ie. commercial and non-commercial subjects) sphere requirements conflict with the quality of the workforce. The most prominent is the educational system being the reflection of the graduates' quality and readiness for required skills. The study presents the specifics of tertiary education in the Czech Republic with the labor market opportunities for university graduates based on the market demand.

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1. Introduction

The Czech society, as well as many other countries of the former sc. *Eastern Bloc*, underwent numerous significant changes and transformations after 1989, which are reflected in the continually growing demands on expertise and readiness of all the members of the society being it the area of everyday life (technical, political, social and human) or conditions in the wider European as well as global context.

Especially the fitness to accept these constant and hardly predictable changes and transformations has been becoming the platform of a personal and civic life, as well as the fitness to manage one's orientation within the

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changes and namely to adequately adapt oneself to these. The antecedence of the newly forming democratic society is the ability to sufficiently dispose of the creative potential of all its members not only in relation to the economic growth, improving employment, social and individual prosperity.

Democracy needs critically and independently thinking citizens who realize their own dignity and who respect the law and the rights of another. It needs individuals able to take responsibility for themselves and for the communal decision-making.

New possibilities for social advancement predetermines above all education as it provides opportunities for development of all faculties to every member of the society by which this becomes the basic social, ethical as well as political requirement. Education and qualification thus represent the only source that the mankind will have in an unlimited amount, and human capital thus becomes the most precious wealth. The fundamental condition for achieving the given aim is to make the education process more effective. Then it is the higher education without whose development it will not be possible to significantly upraise the level of no other groups of human resources. Expansion, diversification, improvement and close relation of higher education with scientific research and economic practice (profit and non-profit sector) are becoming one of the most significant ways towards the nationwide prosperity today. The priority task is to provide graduates with such knowledge and skills to become employable and so that they are able to assert themselves in the rapidly changing requirements of the labor market. (Göttlichová, 2007)

A number of significant changes were reflected also in the education system. They consequently resulted in an unusual expansion of the structure of the provided education services in regards to the new opportunities in the choice of an education method as well as in the choice of individual types of schools. The most significant transformation of the Czech tertiary education as a whole since 1989 was establishing of self-governing mechanisms at universities, incorporating the sector of higher professional education, the possibility of private universities operations, marked growth of students and graduates, and other. The changes within tertiary education led not only to satisfying the growing demand for university education, but they were also a strong and powerful incentive for the further direction of the Czech economy to higher competitiveness, sustainable development, growth of the innovational potential, and at the same they accentuated the social, cultural and historical values.

2. Theoretical Background

2.1 Human resources development

The content of the concept of human resources is conceived in the Strategy of human resources development (HRD) for the Czech Republic in accordance with the prevailing current international practice. The given term is defined in the form of lifelong education and learning (formal and informal) including learning through experience (informal). The aim is namely to improve employability, to increase competences and performance of the individuals and teams. The strategy of human resources development thus includes a wide range of activities, opportunities and stimuli of the education system in the economic practice, public administration and in other sectors. Besides informal education aiming at certain target groups and being realized by other types of institutions standing outside the formal education system, and informal education (not controlled and coordinated by institutions) representing the process of acquiring knowledge, skills and forming attitudes within everyday life, formal education becomes the priority. Formal education is provided by education institutions whereas a school becomes a typical representative, and all this by necessity of clearly defined and legislatively determined objective, content, function, means and ways of evaluation (Strategie rozvoje, 2003)

2.2 Tertiary education

It is then particularly higher education without whose development it would not be possible to significantly upraise the level of no other groups of human resources. Reinforcing the importance of the whole tertiary education (ie. all the standard education following the maturita exam which completes the secondary education in the Czech Republic), especially the higher education sector in continuity with the research and development, plays the priority role in the way to the nationwide prosperity. Higher education development, it means its expansion, diversification,

improving and its close relation with the scientific research, as well as with the economic practice. The given fact is also proved by.

2.2.1 Expansion and diversification of higher education

Among the important aspects contributing to the expansion of higher education mainly opening a certain space allowing development of the private higher education sector belongs. The academic year 2000/01 becomes the milestone because next to 24 public universities, the sector is also entered by the first 8 private universities. While the number of public universities increased in the academic year 2004/5 to 25 and in 2007/08 the increase to 26 remains with no change also in the academic year 2012/13; the situation with private universities is completely different. Already in the academic year 2001/02 the number of private universities increased to 17, in 2002/03 to 27 and in 2004/05 to 36. In the academic year 2008/9 the number was 45 and with the exception of the academic year 2010/11, when the number reduced to 44, the given number of universities remained the same until the academic year 2011/12. In 2012/13 academic year, the number of private universities was 44 again. The increase was recorded also in the number of faculties at public universities. While in the 1989/90 academic year, we encounter the number of university faculties of 69, the (pre-revolutionary) year 1990/91 is presented by 82 faculties, 1991/95 by 95 faculties. In 2000/01 the number of faculties was 111 and with a gradual increase the number in 2012/13 reached already 141 faculties, which represents the increase approximately by 50 %.

In the Czech Republic in the academic year 2012/13 26 public, 44 private and two state universities (University of Defence in Brno managed by the Ministry of Defence, and the Police Academy of the Czech Republic in Prague managed by the Ministry of the Interior) were executing their education activities. 24 public universities, three private universities (Jan Amos Komenský University Prague, Metropolitan University Prague and the University of Finance and Administration) and both the state universities are institutions of a university type (bachelor's, master's and doctoral programs). The other higher education institutions (two public and 39 private) are non-university type institutions (only bachelor's and master's programs). (Czech Statistical Service [online], 2014)

The increasing number of private universities, as well as the increase in the number of public university faculties, are the sign of another indicator which is diversification of higher education. The reflection of the increasing life standard in the higher, more complex and more differentiated consumption in continuity with multifaceted and diverse demand, the necessity of a wider and more complex offer and a higher differentiation of the market into sub-markets is reflected also in the direction of the market of education needs. That results in the need of a prompt reaction from the education institutions, i.e. the ability to react with an offer of new products in a flexible way, being it for instance incorporation of new education programs or various other services thus filling the empty and not covered market gaps.

A significant role has also been played here by a gradual implementation of the structured study model within the sc. Bologna Process that represented dividing bachelor's, master's and doctoral programs, which consequently reflected in the substantial growth of the higher education supply.

2.2.2 Quantity or quality?

However, for the universities to fulfill all the requirements that are posed onto them, they must first of all develop and run activities supporting the quality of their activities and of their effective operation on the education market. The important factor of the effective university activities are ensuring the sufficient number of high-quality students and fulfilling the message of higher education within the society. The Czech higher education has currently been undergoing a long-term reform and due to the demographic crisis a gradual reduction in potential applicants for higher education has been taking place. This is proved by the statistical figures. In the academic year 1989/90 there were 113 417 students at the public universities (out of who there were 3 396 of a foreign nationality), in 1990/91 there was only a slight increase to 118 194 students, whereas the following two years marked a slight decrease (111 990, 114 185). The increase of students in the 1994/95 academic year was contributed by expanding the full-time study form with distance and combined learning (in total 133 342, full-time study form 121 613, distance and combined 14 953). Another considerable increase, although rather slow at first, then represents the above mentioned

entry of private universities into the education market. In the 2000/2001 academic year the total number of students was 190 209 out of which 2 056 at public universities. We can notice the greatest expansion in the 2010/2011 academic year when the number of students represents the peak and at the same time the thought milestone in the number of university students (in total 396 047, out of which: 358 510 with the Czech citizenship, 37 557 with a foreign citizenship, 283 607 in full-time study form, 116 728 in distance and combined learning, 57 387 at private universities) in the Czech Republic. In the academic year 2012/13 we can already see the expected decrease in the number of university students (in total 381 272, out of which: 341 599 with the Czech citizenship, 39 696 with a foreign citizenship, 282 082 in full-time study form, 102 788 in distance and combined learning, 48 392 at private universities) in the Czech Republic. (Czech Statistical Service [online], 2014) The given decrease in the number of students, however, does not seem to be any dramatic and the tendency shows that the endangering decrease can be expected first in the private institutions and only then in the public ones, as well as in the combined learning in comparison with the full-time study form. It is, however, obvious that the total decrease in the number of applicants for higher education study is an unavoidable process. The overall tendency of the number of students evolution at the Czech universities is shown in Fig. 1, where the evolution of the number of university students since 2001 is apparent.

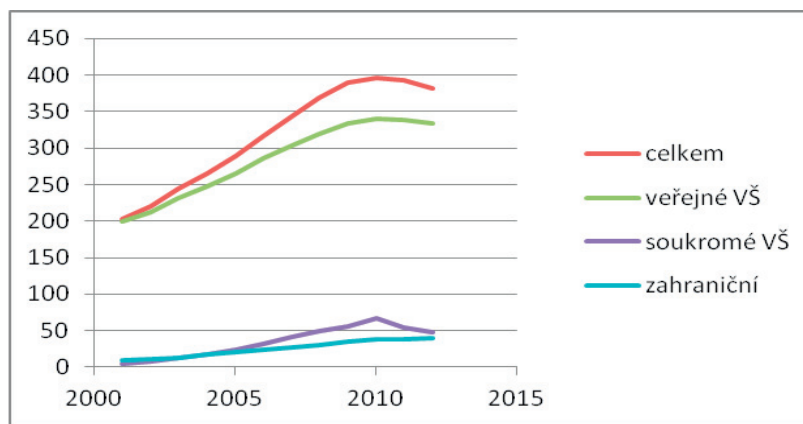


Fig. 1 – Evolution of the number of higher education students in 2001-2012, the numbers are given in thousands of persons (red line – summary of universities in Czech Republic, green line – public universities, dark blue line – private universities, blue line – foreign universities)

The expansion of higher education, which the Czech Republic had been undergoing since the 1990s, was the highest of any developed country in the world. This is also proved by the fact that 60 % of the population age goes to study at university and 7 % at other vocational institutions which are also a part of tertiary education in the Czech Republic. However, neither the economic situation nor the sufficient adaptability of universities to create primarily an appropriate high-quality offer responding to the market do not correspond to the given state of things. With regards to the demographic evolution and its prognoses it is currently necessary to orientate long-term intentions of universities to suspend the quantitative growth and pay more attention to the quality of higher education, ie. to increase competitiveness of universities especially within the European competition. (Fig. 2) (Soukalová, 2013)

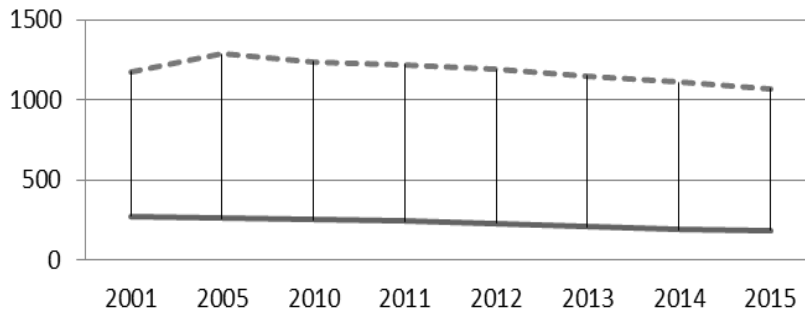


Fig. 2 Demographic evolution of the population at the age 18-26 (line - - - -) and 18-19 (line ······), the numbers are given in thousands of persons

3. Problem formulation

Increasing the quality of higher education means the fundamental connection with the scientific research as well as with the economic practice. To make the education process effective, interlinking of the theory (universities) and practice (commercial and non-commercial subjects) is unavoidable, as well as it is important for the university students to be sufficiently practically prepared for starting their jobs in connection with the development of abilities leading to sufficient orientation in business processes. A significant role here is played mainly by the need to harmonize the offer of the structure of graduates with the labor market demand. Diversification of study offer is related to this, which, among others, aims at the development of professional study and practical teaching at universities with regards to the increasing employability requirements. Higher education thus represents a tool for its sustainability and renewal by orienting its attention towards development of competences in specific areas and contributes to the growth of knowledge and skills increasing the success rate of university graduates on the labor market. It is the employability and employment, i.e. active participation of workforce in the social and economic activities that rank among the priorities of the human resources development. The objective of employment policy is to aim at achieving the equilibrium between the supply of workforce and their demand, at productive utilization of workforce and at ensuring the citizens the right for work. It is, however, essential that every student realizes their responsibility to ensure their future employability because the positive feature of the free choice of a study subject can on one side lead to the negative feature of the market glut in certain areas of work on the other side. This may result in unemployment, which is caused by oversupply. Those graduates with higher qualification, i.e. those who will be able to prove their abilities, knowledge, skills, routines and experience needful for acquiring officially proven competence for exercising a certain profession or position based not only on their diploma but on the basis of their skills, will obtain a more favorable positions with their employers.

3.1 Tertiary education and the labor market

An important aspect leading to simplification of the entrance of university graduates on the labor market is that their abilities, skills and knowledge, which are reflections of the education process, manage to meet employers' requirements as much as possible. The tertiary education system thus becomes an indispensable factor predetermining the future employability of university graduates. It is thus necessary that it is capable of a flexible reaction (and that it actually reacts) to the current as well as future needs of the labor market.

In spite of the fact that the results of the research performed as a part of the project called *Higher education systems and institutions. Development tendencies and social context (2013)* showed that in the Czech Republic in 2000-2010 the number of persons with tertiary education in all fields of study increased, the particular increase was not enough to offset economically active individuals with tertiary education with the number of vacancies requiring

the tertiary education level. The greatest lack of economically active individuals (in comparison with the number of vacancies) with tertiary education was recorded in 2010 in technical sciences, production and construction where the number was lower by approximately 20 thousand than the number of the relevant vacancies. Among other areas with an oversupply of vacancies (for individuals with tertiary education) there were education and training, as well as natural sciences (mathematics and IT technology). In 2010 there thus was about 13 thousand vacancies more (only vacancies requiring tertiary education!) than the number of economically active people.

By 2020 the increase in the number of economically active individuals with tertiary education as well as of vacancies requiring tertiary education level should be continued. Such increase on the both sides of the labor market (supply as well as demand) should include all areas of education. The largest number should be noted for the social sciences, business and law. This increase will be influenced by the number of new university graduates, however, together with the number of individuals graduated from the given field of study who will retire among the economically inactive. “Due to the expected changes, the number of economically active persons with tertiary education should exceed the number of vacancies designed for them in all fields of education. Most of all it will be true for the individuals with a qualification in social sciences, business and law, the least for the individuals with a qualification in technical sciences, production and construction.” (Lepič, 2013)

If we look at the development of the share of university graduates in the total economy on the time line (Fig. 1), even though there is an apparent increasing tendency: 1995/14,20 %; 2000/15,52 %; 2005/17,80 %; 2010/20,62 %, in the overall context of the EU countries, the Czech Republic is so far in the background. In terms of the tertiary education requirements on the vacancies in a coherent view we can see that while in 2000 the vacancies with requirements of higher education on the labor market in the Czech Republic formed 24 %, in 2010 it was more than 28 % and in 2020 it should be a bit less than a third of all vacancies.

4. Problem solution

The problem still remains lying in the fact that the Czech Republic in its system of production and transfer of knowledge draws from the old-fashioned industrial model for which it is typical that there is a constant persistence of relatively high level of separation of individual partners (academic sphere x commercial and non-commercial subjects) and this reflects in the incapability of interconnecting university research with the needs of the industrial companies practice. It is then especially the inability of constructive communication negatively reflected in the effectivity of cooperation of all the main subjects involved. One of the important data sources are *Employer surveys* as their opinion on the quality of workforce and requirements on university graduates contribute to identification of the problematic areas onto which the education system should focus its attention.

4.1 Research objectives and methodology

The objective of the carried out researches is to obtain a sufficiently reliable opinion of employers on the knowledge, abilities and skills (competences) preferences which they find as the priority ones in university graduates. The objective is also to obtain the information on what attitudes they assume towards the graduates, what is important for them when hiring a graduate, which is also related to employers' expectations from the education system. Speaking about the goal of the paper, we follow the development in the employers' requirements in comparison with the results of a research carried out in 2012 (latest published data) under the auspices of the National Institute for Education, School counseling facilities and Further education of pedagogical staff facilities, and at the same time in confrontation to the results of a test carried out by Tomas Bata University in Zlín at the same period of time.

4.1.1 Nationwide research

The survey was carried out from November to December 2012 when 8 300 organizations had been addressed, whereas 543 completed questionnaires were sent back, out of which 333 were completely filled out (6,5 % return). Significant findings from the point of view of a university graduate were on one hand evaluations of the importance of competences of employees with university education, on the other hand the definition of preferences on which

higher education should focus, as well as the reasons or obstacles for their acceptance.

The results of the survey clearly showed that in terms of “absolutely essential” competences the following stand at the forefront: *take responsibility* (91,6 %), *ability of problem-solving* (90,5 %) and *reading and understanding of work instructions* (90,2 %), in which we can see the representation of more than 90 %. The following necessities are equally significant: *skills in oral and written communication* (88,2 %), *ability to decide* (85,7 %) and *willingness to learn* (84 %). An important indicator here is an expansion of the requirements matrix from 2012 (compared to the original matrix from 2004) by the necessity of *skills in oral and written communication*, *ability of presentation and expressing one's own opinion* and *ability to solve stressful situations*. The newly established requirements were the stimulus for the creation of university educational courses focusing their attention on making communication and presenting skills more effective. In terms of the absolutely essential competences the following were least preferred: *proficiency in foreign languages* (54,9 %), which, however, offset the perception from the point of view of the importance of the given requirement (34,6 %).

The result values became the stimulus for the specification of identification of the key competences, on which universities should focus according to the employers' requirements. In these terms, these preferred requirements are emphasized: to be able to *take responsibility* (40,3 %), *to be able to deal with people* (39,2 %) and on the contrary the accentuated necessity of the competence to *be proficient in foreign languages* (37,0 %), consequently followed by others from the newly acquired abilities: *ability to solve stressful situations* (36,1 %) and *skills in oral and written communication* (36,1 %), followed by the ability of *problem-solving* (35,0 %). The competence of *reading and understanding work instructions* (18,6 %) ranked at the lowest position of the key competences requirements.

An important benefit of the survey was also having found out the requirements for the corporate criteria for acceptance of university graduates for a job position. The following criteria ranked at the forefront: 1. *interest in the position* (10,1 %), 2. *willingness to learn* (8,6 %) and *required qualification* (8,6 %), 3. *flexibility* (7,1 %), *diligence* (7,1 %) and *communication skills* (7,1 %), 4. *capability of teamwork* (6,9 %), 5. *professional qualification and orientation within the particular field* (6,7 %), 7. *willingness to take responsibility* (6,3 %). At the bottom line we encounter the requirement for *proficiency in foreign languages* and the last position is taken by *the requirement for former experience and professional experience* (1,1 %).

For universities as well as for students themselves the reasons for the refusal to accept the graduates are very important. According to employers these are first reasons for refusal: unrealistic expectations of the salary amount, of working hours or the job title. Most of the employers believe that some positions cannot be taken by graduates as the particular positions require experience and applicants without experience cannot be hired for these positions. This is closely linked to a rather frequent reason of refusing an applicant-graduate, which is the lack of work and professional experience. Another limitation is then a longer time needed for incorporation and training of a graduate. Graduates with some experience are preferred by 86 % of employers (Doležalová, G., Vojtěch, J. 2013)

4.1.2 Tomas Bata University (UTB), Zlín

Getting feedback from completed work internships of the university students and graduates at working positions is coming into the center of interest of the universities. Under Tomas Bata University in Zlín there had been surveys carried out to find out the requirements for competences of the UTB graduates and students according to their readiness. importance/quality. At present, the attention is aimed at feedbacks from the master's program students completed internships (6-week long ones) when for instance since this academic year compulsory internships have been established also for the bachelor's study programs (a 4-week long internship) based on the employers' requirements.

Table 1: The UTB students competences ranking according to their readiness importance/quality - 2012

	Importance	quality/ readiness
Active approach/interest in the position	1.	1.
Interest in new information /in learning	2.	3.
Competence of personal negotiation/effective communication	3.	2.
Professional knowledge/professional qualification	3.	5.
Teamwork/ability to cooperate	4.	2.
Independence/own invention	5.	4.
Communication in a foreign language	6.	4.
Soft computer skills	Matter of course	Matter of course

Also the results of the research test (see Chart 1) clearly showed that active approach of the students towards new knowledge with the need of education is at the forefront of employers' interests, which directly corresponds with the results of the nationwide survey from the point of view of the required criteria of employers on university graduates. Relatively an equal concordance can be seen also in other preferred competences which are communication, teamwork and independence. Another concordance is found also in proficiency in foreign languages where on one hand it does not become the priority of the employers, on the other hand it does not meet their needs and ideas. Professional qualification is, however, still a problem as on the basis of students' readiness evaluation, professional qualification is still at the lower evaluation border.

4.1.3 "Cooperation" project – a solution option?

The results of the survey clearly showed that the priority of university education and professional training is not only achieving a certain percentage of individuals with higher education but ensuring a proper quality of education and employability of graduates on the labor market. It has thus become a necessity to find a way of interaction between study areas and the market demand, eg. by means of cooperation of employers, education institutions as well as the public administration. The need for effective communication with the transfer of information, acquiring knowledge not only from the Czech but also foreign environment, but particularly the support of all the mentioned subjects involved and their mutual cooperation development – these were the main stimuli resulting in the project officially named *Cooperation of higher education, public administration, business and non-profit sectors for socio-economic development of the region (Kooperace vysokého školství, veřejné správy, podnikatelského a neziskového sektoru pro socioekonomický rozvoj regionu)*. The aim of the project is development of international cooperation and exchange of experience in the area of human resources and employment development on the basis of cooperation and interlinked activities of the academic sphere, non-profit sector, public and business sector under the partnership principle – a partnership whose members are Tomas Bata University in Zlín, the Zlín region, the town of Zlín, Chamber of Commerce and Business in Kroměříž, the Labor Office in Zlín and the Association of non-governmental organizations of the Zlín region. The task of the established partnership is to function as a platform for monitoring the needs of the target groups, monitoring effective distribution of sources, exchanging experience, creating expert studies, searching for innovative solutions, creating methodological suggestions, legislative proposals and above all as a platform for a constructive discussion on the options of socio-economic development of the region with the focus on employment and human resources development (Project of Cooperation, 2013). It is then possible to compare these results with similar studies have been realization. (Juříková, Jurášková, Tolarová, 2013), (Šviráková, 2014)

5. Conclusion

As was already mentioned, it is the constructive cooperation and communication of universities with the economic sector that may be the reflection of creating a better-quality curriculum drawn from the requirements of the practice sphere where also for instance a feedback in requirements and criteria of employers can become a significant benefit. What is important is the consequent reflection of innovated teaching and enrichment of the education program aiming at enhancing (such a problematic) quality of professional education, whether it is a form of participation of experts from practice in the teaching, or controlled professional internships in companies (public institutions). The students thus have the opportunity to gain the necessary amount of information and documents to be utilized within the education process. Professional internships may give students an insight into realistic conditions of employment, provide them with a complex set of theoretical and practical knowledge and skills, which may become the base for their future professional orientation. The economic subjects of commercial as well as of non-commercial types on the other hand gain the opportunity to realistically prove the level of knowledge, abilities and skills of the university students and thus gain awareness of their approach to work, which is ranked at the first position among the required competences. Based on the acquired information they then can present the university students an offer of employment, which represents an important positive for both sides. Mutual cooperation does not represent submission of universities to the political sphere and employers' interests but on the contrary it represents a really beneficial opening of the academic sphere to the employers' interests, general public and the regions themselves.

Acknowledgements

The survey of the employers' needs and readiness of graduates for entering the labor market is carried out under the "ISA – Information system on graduates employability on the labor market" project whose objective it is to build a functioning information system which will allow to gather, process and analyze relevant information (economic development, demographic evolution, demands and needs of the labor market or employers, the education system development).

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