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Society, Higher Education and Labour Market

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ABSTRACT

Based on the authors' scientific cooperation and research results the goal of the paper is to analyse and compare some connections between higher educational system and employability of graduates on the labour market in the Czech Republic. Currently being discussed situation in universities and possibilities for graduates both social-economic-managerial and technical training guidelines, effects of changes in society and technology to study the content and its usage in the labour market. Fourth industrial revolution and called creative economy brings with it significant changes. From the perspective of the current job requirements and professional competencies of graduates, the authors' research results support the assumption that the system, principles and methods of higher education must be oriented on the development of students' theoretical, practical and social skills.

INTRODUCTION

The paper is focused on selected issues of the relationship between higher education and employability of graduates on the labour market in the Czech Republic. The society with its conditions and requirements creates a comprehensive framework in which the educational process takes place. The paper is focused on some aspects of the relationship of education and society, as well as on some elements of development and ongoing changes. Today's society is probably facing the fourth industrial revolution, which is based on information technologies.

All developed countries declare that they are heading towards a knowledge society, for which is necessary an effective system of higher education. Graduates occupy key positions in the knowledge society and the need of people with a university degree is related to requirements for advanced knowledge, skills and abilities. The knowledge society needs a new quality of workers. It needs educated and flexible professionals. Universities as institutions play an important role in helping students to develop their knowledge, skills and abilities. The level of

development of individual knowledge, skills and abilities increasingly affects the career and life paths of graduates.

Currently being discussed situation in universities and possibilities for graduates both social-economic-managerial and technical training guidelines, effects of changes in society and technology to study the content and its usage in the labour market. Fourth industrial revolution and called creative economy brings with it significant changes.

In connection with constant and radical changes in business conditions in the global information economy, educated people are seen as the most important source and the greatest wealth of any country or organization. And so, the effectiveness of higher education has been highlighted in most developed countries, focusing on the efficient formation and development of professional and personal skills of young specialists in various technical, economic and humanistic professions. In this context it can be argued that the higher the level of education in the society, the higher the standard of living in the society, but under the condition that the education meets the needs of the society. Through the effective higher education system, young people are systematically prepared for a successful life and a professional career in the society. The effectiveness of higher education affects the employability and competitiveness of graduates in the labour market. Well educated and motivated young people determine the future prosperity and competitiveness of the society.

1. OBJECTIVES AND METHODOLOGY OF EMPIRICAL RESEARCH

The aim of the paper is focused on some questions concentrated on the development of university education in context of changes in Czech society with retrospective view on education in 20th century. It aims to highlight some of the situations in the focus of education with regard to the current and future developments and graduates employability at labour market.

The paper contains results of the social empirical studies and the secondary analysis of statistical data of the Czech Statistical Office, the Ministry of Education, Youth and Sports of the Czech Republic (data on numbers of university graduates), OECD and Eurostat.

The first base of data is selected data of longitudinal sociological research Positions of CTU graduates on the labour market and its satisfaction realised by J. Šafránková in time period from 1996 to 2013 at Czech Technical University in Prague (Šafránková, 1996-2013). The data collection methods were surveys with questionnaire about sixty four questions, open, closed and semi-closed and fifty structured interviews, the methods of data analysis, mostly classification of first and second degree. The tools of surveys were concentrated on description of graduates, mainly their position on Czech labour market, needed competition for receiving good job position and some feedback to education system at CTU. The numbers of respondents were as follows: 1996 – 681 graduates from 1985 to 1994; 2003 – 1,357 graduates from 1993 to 2000; 2005 – 828 graduates from 1985 to 1993 and from 2000 to 2003; 2009 – 380 graduates from 1999, 2004, and 2008; 2010 – 340 graduates from 2000, 2005, and 2009; 2011 – 67 graduates from 2010; 2013 – 460 graduates from 2008 and 2012.

The second base of data for comparison was using selected data from research REFLEX 2013 realised by Education Policy Centre Charles University in Prague (Koucký, Ryška & Zelenka, 2014), where take part Czech Technical University in Prague (J. Šafránková). Structure of population was fifth hundred CTU graduates from year 2008 and 2012. There was used questionnaire about questions, open, closed and semi-closed. The tools of surveys were concentrated on description of graduates, mainly their position on Czech labour market, needed competition for receiving good job position and some feedback to education system at Czech universities. Data from CTU was analysed by J. Šafránková and we used as comparison example only small part as concentrated to opinions on competencies.

The third base of data is data of students of The College of Regional Development, pilot research realised in March 2016 by J. Šafránková and M. Šikýř (structure of population was three hundred students). The data collection methods was surveys with questionnaire about thirty questions, open, closed and semi-closed, the method of data analysis was classification of first and second degree. The tools of surveys were concentrated on description of the position of students on the labour market. The relevant data were obtained from 200 students.

In summarising the positive and negative methodological experience at CTU we have any difficulties in the implementation of the initial research concept in the beginning of longitudinal research in the early 90.years, but because the research had the opportunity to build on a survey of graduates from the 70s and 80s of the 20th century in the Czech Republic and at CTU, a significant methodological problems were absent. Newly was created issues for private business, working in private companies and to the reflection of the graduates. During the investigation the updated some areas, such as evaluation language teaching, study abroad, etc. There was only one unpredictable organizational change from printed to electronic questionnaires. With new surveys at The College of regional development, we are using as model the questionnaire for students and graduates and we start to testing differences between students and graduates of technical background and management of regional development.

2. EDUCATION AND CONDITIONS IN SOCIETY

The issue of education occupies a very important place in contemporary advanced societies that are sometimes referred to as learning or knowledge societies. In some cases, the process of education is described as a revolutionary process whose importance replaces former social revolutions – radical changes can be realised in other ways that are based on education as a society-wide process. The increasing importance of education is related to the increasing importance of science and its application in all basic areas of human life, to processes of democratization, to the increasing role of human being and to processes of individualization.

The first industrial revolution broke out in the late 18th century and takes place under the sign of factories that use energy waterways and couples. This period needed large numbers of skilled workers manually, the system begins coaching of workers for the development of technology workers are mostly secondary technical education. The second took place in the early 20th century. They characterized the band production, use of electricity and internal combustion engines. There was continued the trend of education, consolidate a system of apprenticeship workers, and expanding the technical university education. The third revolution started in the 70s with the advent of microprocessors, using computers and automation of individual production lines. In this period, reduces the number of workers and significantly increase the need for university-educated technicians, there is a huge development of deliberate technical universities. About the fourth industrial revolution begins to speak quite recently, after 2010.The fourth industrial revolution represents cyber-physical systems that create "smart factory". Smart devices will take over certain activities previously carried out by people. It is envisaged methods of machine perception, auto-configuration and diagnostics, and computer links and machine parts. What changes will bring to education and job opportunities are still under discussion.

In the 19th and 20th centuries, the concept of education was developed primarily to meet the needs of industrial society. The gradual development of Science and technology was accompanied by the addition of new subjects or new topics. From the historical development and socio-economic perspective it can be said that the industrial society is changing into the information society or that it enters the next phase of the industrial revolution. This situation brings new demands on education, and therefore it “disputes the assertion that in the future we will do the same things in education that we have done until now, but much better and more consist-

ently. It disputes the belief that in terms of the content of teaching it is sufficient to increase the level of what is now" (Skalková, 2007, p. 106).

If the anticipated fourth revolution will transform the entire system of production, distribution, consumption, and probably also the essence of being human, you cannot expect a revolution will take place in the current environment, and until after the result will appear. During the process of any revolution or evolution, we meet with dangerous challenges and simultaneously captivating and enticing opportunities. That in itself is nothing new, and certainly not for the organizer, and the greater part of the forum participants. The problem is that the environment, in which a revolution takes place, is not fixed but is soft, sometimes even liquid. In addition, the time information and individualism is coming to an end. Information herself inflation devalues information. The individual himself devalues ignoring the fact that it is the foundation of society. The basis of both is the information and the company's relationship. There will be increasingly important human skills, as creativity, the ability to think critically, collaborate and negotiate with others. The Czech Republic went through significant political changes in the 20th century. But what has not changed is its position as an industrial country. This situation is also related to education system. Technically oriented disciplines have been developed since the 19th century. The needs of industrial production have created a framework of preferred types of education. The development and structure of education in the Czech Lends can be described in terms of basic statistical data (table 1). More than 150 years ago, in 1860, 82.3% of men and 95.9% of women had primary education (including incomplete primary education). In 1900 the situation changed. 57.2% of men and 87.0% of women had primary education and the proportion of people with incomplete primary education significantly decreased (Tuček, 1995).

Table 1 . Education of population in the Czech lands 1860-1960 (%)

Education	*1860*		*1900*		*1920*		*1960*	
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*
Incomplete primary	38.3	52.8	10.3	19.5	1.9	4.1		
Primary	44.0	43.1	47.9	68.5	28.3	58.0	8.4	12.2
Apprenticeship	14.4	1.6	28.4	5.6	35.5	17.5	50.0	31.9
Secondary	0.8	1.3	4.6	3.8	7.9	10.1	1.0	1.4
Baccalaureate	1.6	0.8	6.9	2.5	18.3	8.8	22.1	38.8
University	0.8		1.8	0.3	8.1	1.4	18.5	15.7

Source: data of the Czech Statistical Office and the Ministry of Education, Youth and Sports of the Czech Republic

From 1950 to 1960 70% of young people still had only primary education (ten years later, it was only 30%). From 1948 to 1989 the universities had accurate quotas on numbers of students and technical education was strongly supported (Machonin et al., 1996, pp. 44-45).

Table 2. Numbers of students by study programmes in the Czech lands 1948-1980

Study programmes	*1948*	*1960*	*1970*	*1980*
University	30,825	27,811	36,204	46,478
Technics	12,416	25,284	30,628	49,371
Economics	4,442	3,994	5,689	10,875
Agriculture			7,529	11,482
Artistic			1,422	1,644

Source: data of the Czech Statistical Office and the Ministry of Education, Youth and Sports of the Czech Republic

In the year 1948 by number of students the first was university education, in the year 1980 the first was technical universities. From 1950 to 1980 the number of student at technical universities increased significantly. After year 1990 the number of technical students was decreasing.

Table 3. Number of Universities and students in the Czech lands 1936-1983

Year	*Number of universities*	*Number of faculties*	*Students – summary*	*% of woman*	*Number of university students on population in thousands*
1936	12	49	24,810	3,724	2,0
1945	8	32	46,230	8,536	4,6
1946	13	40			5,9
1947	14	39	54,524	11,214	5,9
1948	18	40			5,5
1949	18	34	39,871	8,464	4,7
1950	21	36	34,639	8,790	3,7
1951	20	46	37,671	6,779	4,1
1955	28	73	50,886	9,064	5,3
1960	34	75	64,397	16,407	6,5
1970	24	67	81,472	23,692	8,0
1975	23	65	92,362	28,553	8,9
1980	23	68	119,850	38,954	11,4
1981	23	68	120,914	40,897	11,5
1982	23	68	119,352	41,663	11,3
1983	23	68	114,529	40,622	10,8

Source: data of the Czech Statistical Office and the Ministry of Education, Youth and Sports of the Czech Republic

From 1936 to 1983 the number of universities in the Czech lands increased from 12 to 23 and the number of faculties increased from 49 to 68. The largest universities are Charles University in Prague, Czech Technical University in Prague, Masaryk University in Brno and Technical University in Brno. The number of university students was 25,000 in 1936, 34,639 in 1950 and 120,914 in 1981. Radical changes in society have a significant impact on education, on its overall character as well as on its individual parts, especially on participants in the educational process. After 1989, the period of social and economic transformation brought great diversification into the system of education as well as into the system of production (Machonin et al., 1996). There has been a rapid development of tertiary sphere (services) and quaternary sphere (education and science). Many young people have had the opportunity to study at university and many new private universities have been founded, but they are focused exclusively on desired economic, managerial and social discipline. There has been founded no technical private university.

Czech higher education has changed profoundly since 1989. The most important and rapid change occurred in its autonomy. The structural change was not as quick and profound as obtaining and mastering the freedom was. There were two really significant structural changes in the Czech tertiary educational system: decentralisation, which was made possible by establishing regional universities, and diversification, mostly due to the growth of private colleges, gradually filling the gap in the offer of bachelor's degree programmes. Public universities themselves made no strong move towards the two-tier (binary) system of tertiary education. *„Although the number of students rose by almost 60% between 1989 and 2001, the offer of educational opportunities was too low to meet the steeply rising demand the offer of educational opportunities was too low to meet the steeply rising demand for tertiary education. The chance of being admitted did not change; it remained at about 50%, and it started to grow only after 2001, mostly*

owing to the combined effect of a drop in the size of the relevant age cohort and the growing proportion of students admitted to short bachelor's programmes. Given the rapid growth in the number of secondary school graduates and the steady accumulation of unsatisfied demand, the transition from secondary to tertiary education is still the most critical moment in an educational career". (Matějů and Večerník, 2003, p. 409)

Table 4. University students by study programmes in the Czech Republic 2001 and 2013

Programmes	2001	2013
Education	27,205	3,677
Humanities, arts	19,645	3,825
Social sciences, Business, Law	53,102	120,571
Nature sciences, mathematics, informatics	21,095	49,686
Technical sciences, manufacturing, civil engineering	50,551	55,347
Agriculture, veterinary	8,415	15,390
Health and social care	18,118	3,787
Services	7,756	18,030

Source: data of the Czech Statistical Office and the Ministry of Education, Youth and Sports of the Czech Republic

Student on Educational programme Social sciences, Business and Law from 2001 to 2013 increased 2.5 times. This study programmes are studying 32% of all undergraduate and postgraduate students. The second by number of students are Technical sciences, manufacturing and civil engineering with 14% of all under and postgraduates student at Czech universities. The number of students in higher education, i.e. universities and colleges is rapidly grown in the period of fifteen years from 2000 to 2014. In the year 2001 in Czech higher institution studied 203 500 students and in year 2010 396 000 students. This increase most likely because at that period studied numerically relatively large groups born between 1980 and 1994. After 2010 the number of students is slowly decreases because the students are from numerically weaker age groups born after 1995, and this trend will continue. It is estimated that the number of students could drop after 2020 to 270 000. The social changes and changes in lifestyle resulted in a significant increase of the number of female students from 98,000 in 2000 to more than 205,000 in 2013.

Table 5. Number of university students and graduates in the Czech Republic 2001-2014

Year	Students in thousands	% of students	Graduates in thousands
2001	203,5	12	30,1
2002	220,2	13	31,2
2003	243,7	15	33,0
2004	264,8	16	38,4
2005	289,5	18	44,3
2006	316,2	21	53,6
2007	343,9	23	63,6
2008	368,1	25	73,2
2009	389,0	26	81,7
2010	396,0	27	88,1
2011	392,1	27	93,0
2012	381,0	28	93,9
2013	367,9	27	91,6
2014	347,3	27	88,1

Source: data of the Czech Statistical Office and the Ministry of Education, Youth and Sports of the Czech Republic

For comparison, some data on the proportion of tertiary education in the country OECD and Czech Republic (Kleňhová, 2016):

1) The proportion of people with higher education in OECD countries and in the Czech Republic (CR):
- aged 25 to 34 OECD 41% CR 30%
- aged 55 to 64 OECD 25% CR 15%

2) The proportion of employed people by education:
- lower education OECD 56% CR 53%
- upper secondary education OECD 74% CR 78%
- higher education OECD 83% CR 84%

3) The proportion of unemployed people by education:
- lower education OECD 12.8% CR 20.7 %
- upper secondary education OECD 7.7 % CR 5.4 %
- higher education OECD 5.1% CR 2.6 %

4) By earnings, in OECD countries people with higher education earn 60% more than people without education.

In the Czech Republic, the earnings of people with higher education started to increase soon after 1989. Higher education has become a strong and positive factor of earnings. It has become a main strategy of life success. This resulted in a higher interest in studying at universities. (Hraba et al., 2000, p. 417)

In recent years, however, the direct links between higher education and the labour market have significantly weakened. According to Koucký and Zelenka (2011) there are indications of weakening of direct paths leading from education to employment. Education is generally not focused on learning knowledge, skills and abilities for specific professions, but on learning widely applicable knowledge, skills and abilities. In accordance with Keller (2015, p. 71), the aim of education is to prepare flexible people who are willing to pursue lifelong learning and provide their knowledge, skills and abilities to rapidly changing markets.

3. EDUCATION AND GRADUATES KNOWLEDGE AT LABOUR MARKET

Today, there seems to be a serious shortage of skilled specialists in technical professions on the Czech labour market and employers are looking for specialists with both secondary and higher education (Doležalová and Vojtěch, 2013). However, the problem is that the professional and personal qualities of graduates often do not meet the requirements of employers. Graduates have usually better theoretical knowledge than practical experience in the field of their interest (Stanciu and Banciu, 2012). Many graduates of various specializations often lack relevant professional skills and social habits (Cutillas, Monfort and Tortajada, 2011). Some graduates also have no real idea about their future career, but often require positions that do not match their abilities, just to get a job of their dreams, a job promising them high earnings and rapid career (Garcia-Arical and Van der Velden, 2008). This significantly increases unemployment among young people, which is a serious problem for the whole society and is associated with significant costs (Sirůček and Pavelka, 2013).

From the perspective of the current job requirements and professional competencies of graduates, the results of the analysis support the idea that the system, principles, and methods of technical higher education must be oriented on the development of students' theoretical, practical and social skills. In terms of common job requirements, suitable job applicants must demonstrate both the professional capacity to perform the job, as well as the development po-

tential for professional growth and career advancement. The basis for the successful fulfilment of these requirements is quality education that serves as an important basis for further professional development (Kucharčíková, 2013).

The professional and personal qualities of graduates often do not meet the requirements of employers. In terms of common job requirements, suitable job applicants must demonstrate both the professional capacity to perform the job, as well as the development potential for professional growth and career advancement. According to many employers, most of today's graduates do not meet the requirements for professional skills and experience, as well as social behaviour and professional motivation.

Coming to work, most of today's graduates do not have any real idea about their profession. They often do not know the main duties or primary responsibilities of the work. Even if they worked during their studies, they usually have no understanding of how to perform daily work tasks and how to solve real professional problems. They do not know how to use their theoretical knowledge in practice. They also do not have the teamwork skills. They lack the ability to collaborate and communicate with colleagues, managers and clients. They are not able to analyse the available information, identify key issues, express their views and discuss alternative solutions.

According to the results of sociological surveys of graduates from the Czech Technical University in Prague (Šafránková, 1996-2013) and students from The College of Regional Development (Šafránková and Šikýř, 2016) the most important skills necessary for successful employment are problem-solving skills, the ability to learn new knowledge, communication and teamwork skills. In terms of professional qualification, on the one hand, graduates appreciate general knowledge in the field of their interest. On the other hand, they feel the lack of relevant practical experience. According to the graduates, they had to improve mainly their knowledge of foreign languages.

The view of graduates

The common problems that graduates meet during a job search include: *salary level* (graduates' expectations are usually higher than the real wage that an employer can offer to a newcomer with the lack of relevant work experience); *professional skills* (following the previous problem, of course graduates lack relevant professional skills, even if they worked during their studies, but every employer has specific requirements); *starting position* (graduates do not want to start from scratch, overestimate themselves and require a position that does not match their abilities); *hard working* (graduates do not have needed work attitude and are not ready for the hard work at the beginning of their career).Situation is the same at technical graduates and management of regions.

In the course of monitoring the possibility of the graduates to assert themselves on the labour market and their further education it is important to find their opinions of the system of education at a faculty. Its evaluation is one of the most important feedback factors for drawing the curricula. If the graduates point out problems concerning the application of their knowledge, they at the same time point out the necessity of changes both in the content and form of teaching or individual educational programmes. On the contrary, their satisfaction witnesses the good content of an educational programme or individual subjects. Within the researches the graduates evaluate according to their experience how they are prepared for work after graduation from a faculty. It is clear that study at a university cannot prepare graduates fully for all kinds of work. Nevertheless, it is important as a feedback.

The researches monitor whether the graduates are satisfied and how they apply their knowledge acquired at a faculty in their everyday activities. They monitor their opinions of teaching, i.e. both theoretical and practical or supplementary subjects such as languages or humanities; in addition, the studies find out which knowledge is appreciated, which gaps in it should be

filled and which knowledge and skills are important for the graduates to assert themselves on the labour market.

Results of the last representative research of Reflex in 2013 (Koucký and Ryška, 2015), which encompassed all Czech university graduates from 2008 to 2012, including a sample of 500 CTU graduates. We interpreted only small part of results concerning competencies of CTU graduates between years 2008-2012. In the research answered theirs employers. The main part of results corresponds to the longitudinal CTU research.

Table 6. CTU graduates competencies (2008-2012, summary)

Competencies (scale 10 –max., 1 min.)	*Graduates*	*Employers*
General knowledge and insight	6.29	6.36
Professional theoretical and methodological knowledge	7.17	6.95
The ability to use expert knowledge in practice	6.36	7.05
Knowledge of the conditions for the use of expert methods and theories in practice	6.08	6.29
Language skills in a foreign language	4.24	5.97
Mathematical skills	7.23	5.18
Computer skills	6.54	6.87
Ability to work with information	7.04	7.50
Skills to identify and solve problems	6.47	7.73
Skills of creative and flexible thinking and acting	6.26	7.35
Presentation skills and writing skills	5.87	6.54
Independent decision-making skills	5.97	6.57
Teamwork	5.91	7.25
Ability to take responsibility	5.56	7.13
Organizational and management skills to lead a team	4.56	6.09
The ability to think and act economically / economic eligibility	5.03	6.56
The ability to communicate with people, to negotiate	5.05	7.16
Ability to adapt to changing circumstances, conditions	5.95	7.14
Ability to work in a multicultural / international environment	4.72	5.98
Ability to train and organize own learning	6.96	6.47
Technical competencies	6.35	6.59
Legal eligibility	4.55	5.44

Source: research REFLEX 2013, CTU graduates, CTU data 2013

Notes: The Reflex research used for evaluation of competencies indicator as a scale, when 10 is maximum and 1 is minimum. The authors are aware that in consequent comparisons there were used 2 methods of evaluation. For this level of interpretation, this approach is methodologically possible because the opinions of graduates and employers are compared). From Reflex results in the point of view of CTU graduates and their employers the main difference is in "Mathematical skills". Graduates appreciate it and when asked to evaluate it on scale, they level themselves by 7.23 from 10 points possible, while the demand of employers is only 5.18, which is far lower than the real level of this competency. Problems in real level of competencies from graduate evaluation and demand of employers are mainly in following five competencies:

- Teamwork 5.91 : 7.25
- Ability to take responsibility 5.56 : 7.13
- Organizational and management skills to lead a team 4.56 : 6.09
- The ability to think and act economically / economic eligibility 5.03 : 6.56
- The ability to communicate with people 5.05 : 7.16

It has been more than 20 years discussion between universities and employers, what competencies have to have graduates of technical universities, as mainly technical or greater soft skills and ability to manage and work in teams (Šafránková and Franěk, 2008).

The view of employers

The common problems that employers meet during graduates hiring follow the above mentioned problems of graduates and include: professional experience (employers prefer hiring experienced workers to inexperienced graduates); particular specialization (graduates normally do not have the required professional specialization and it always means additional expenses for training of graduates); professional orientation (graduates usually have no idea about their future career, but they often prefer to work in big international companies, such as banks or consultancy companies, and they less tend to work in industry); work and social habits (graduates lack required work attitude and teamwork skills); uncertain investment (employers invest in training of graduates who, however, use different opportunities and often change jobs).

The view of universities

It follows that in the current business environment, with regard to the specific requirements of employers the higher education must be directed to the development of both professional and personal qualities of students, who must gain the relevant theoretical knowledge, practical skills and social habits. In this context, the main problems that universities meet include: relationships with employers (in general, universities search for partner companies, however, only some universities are actually ready to effective cooperation and appropriate relationships with suitable employers are very rare); educational programs (educational programs are not flexible enough to reflect permanent changes in various fields and meet the changing requirements of employers and the needs of the labour market); academic staff (many academics who teach at universities lack real practical experience, cannot apply their theoretical knowledge through practical examples and therefore the educational process lacks real authority).

CONCLUSION

Higher education in the Czech Republic has undergone significant changes over the past 150 years. The changes were related to the concept and structure of higher education as well as the quantity and quality of students and graduates. For the past twenty-five years, the quantity has increased, but the quality has decreased. It is related to the development of industrial production and modern technologies. A decrease in the volume of industrial production is associated with a decrease in the need of graduates from technical universities, but the decrease is much greater than the real needs of the labour market. On the other hand, the number of graduates from economic and humanistic universities increases and exceeds the needs of the labour market, however these graduates usually have no problem to find a suitable job, mainly due to their widely applicable knowledge, skills and abilities.

Today, there are many different public and private universities in the Czech Republic that provide different programmes for specialists (bachelors, engineers, doctors) of various technical, economic and humanities professions. A serious problem is that the professional and personal qualities of graduates often do not meet the requirements of employers. Many graduates of various specializations often lack relevant professional skills and social habits. They have general knowledge in the field of their interest, but they do not know how to use their knowledge in practice. They usually have no understanding of how to perform daily work tasks and how to solve real professional problems. With regard to the specific requirements of employers, the technical higher education must be directed to the development of relevant theoretical knowledge, practical skills and social habits of students. Academics have to learn how to efficiently and effectively apply modern interactive teaching methods and educational programs must be created in cooperation with suitable employers. These issues open up new possibilities for further research in the field of higher education.

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