

Higher Education Opportunities in Slovakia

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ABSTRACT

Universities and education tied to them are an area which is a part of fundamental public topics. Current development of higher education system is an interesting research topic because of its evolution trend which can be observed in an increase in number of universities and faculties, their detached workplaces and number of students and graduates as well. Quantitative university development has been very dynamic during past 25 years which forces one to think about quality level of higher education and its perspectives for the future. In our research we try to present universities in Slovak republic from temporal and spatial point of view. Timeline researched consists of years ranging from 1919 up to 2014. Increased attention is paid to the increase in number of universities, their students, graduates and professors after the year 1989 when the most significant changes in universities and Slovak republic as a whole took place.

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KEYWORDS: *university, education, student, graduate, space, region*

INTRODUCTION

Main mission of universities is to educate and raise a harmonic person filled with knowledge, wisdom and creativity. Education is a tool which changes every person, it is a qualitative indicator of workforce' quality. It is widely while looking for a job but also used for growth of regions and economic development of a country. In practice we also look at a level of education which is often understood as statistical representation of education level of grown-up population. Educational structure shows how is education spread in a population with regards to certain level of education. We would like to present an evolution of universities in Slovakia since the creation of Czechoslovakia in 1918 up to present situation. It is certain that specific time periods brought several changes to spatial structure of universities, their study programs and number of students. To develop an idea of future development in education one needs to study not only the current situation but also the history. Special attention is paid to a change in spatial structure of universities and to a number of students after year 1989. Important result worth mentioning is an era of rapid increase and then rapid decrease of students in Slovakia as well as quality of selected universities that were evaluated by academic ranking and rating agency (ARRA).

1 THEORETICAL BACKGROUND

Educated people have better chance to succeed on a labour market and have more jobs to choose from, they are capable of flexibly adapting to employer's requirements and show higher rate of innovations. Expert knowledge of working class, its experience, skills and qualification we know as human capital which is needed in every part of economy and its most important source is tertiary education. Education is one of the most important forms of investment into human capital. It is a form of investment for the future not only for an individual but also has an impact on a society as a whole. This form of investment was neglected for several decades though even after Adam Smith acknowledged direct and positive impact of education on labour productivity. Importance of human capital quality and its use in economy was highlighted by Becker (1993 – in Dobeš 2001) according to whom no state will achieve more lasting economic growth period without investing into educating its labor force. It is a statement saying that even in times of economic recession one shall not forget about investing in human capital, which even though does not bring immediate profit is crucial from long-term point of view to maintain economic growth. Countries with stable economic growth were characterized by significant increase in educating its labor force.

Trends in evolution of education structure in Slovakia were researched from temporal point of view by V. Lauko, D. Gurnák, F. Križan and L. Tolmači (2009). They focused on real impact of middle and higher education on education structure of citizens in Slovakia. Authors pointed out vastly different evolution in specific regions of Slovakia and a speed (of changes that took place) which was dependent on a distance from two centers, Bratislava and Košice, for a very long time. Evolution of universities in Czech and Slovak republic was also researched by Vlčková, V. and Kouřilová, J. (2010). Authors provided closer look at a development in educational system after the dissolution of Czechoslovakia and different situation after 1990 in Czech and Slovak republic respectively. According to Walterová (2004) we understand education as an ability of whole society not only to learn from cultural and social experience but also to create new knowledge and use it for out development.

Achieving or failing to achieve demanded quality of individuals is a result of many factors taking place in educational process. Its precondition is continuous innovation of education process and services a therefore achievement of competitiveness with regards to national and international educational standards.

2 EVOLUTION OF UNIVERSITIES IN SLOVAKIA

Higher education has very long tradition in Slovakia. Perspectives of development are not possible without knowing its evolution, which led to its current situation.

After the creation of Czechoslovak republic (1918) conditions under which education at universities existed were very different in both Czech and Slovak republic. In that time there was no Slovak university in Slovakia. There was a Hungarian university in Bratislava which moved to city Pécs in 1923 (see History of the University of Pécs, available at <http://english.pte.hu/menu/77/25>, 1.11.2010).

Slovaks studied on universities in Hungary, Austria or in Czech Republic. University of J.A. Comenius was founded in Bratislava in 1919 and during years 1939-1945 was called Slovak university. In year 1937 Technical university of Dr. M.R. Štefánik was founded in Košice which moved to Martin only one year later (1938) and next year (1939) to Bratislava under a new name Slovak technical university (name change occurred already in Martin). In year 1940 Business University in Bratislava was founded, today called University of Economics in Bratislava.

In academic year 1945/1946 there were 3 universities in Slovakia, together with 12 faculties on which 8 672 Slovak students studied, out of which 18, 6% were women. Until academic year 1960/1961 the number of universities increased to 16 (with 33 faculties) which was a result of establishing new pedagogical institutes in Trnava, Nitra, Banská Bystrica, Martin, Košice and Prešov in year 1959. They operated as independent institutes only until 1963/1964 and then they were integrated into universities which resulted in a decrease in number of universities to 12. In academic year 1970/1971 until 1990 there were 13 universities in Slovakia. Changes in society after year 1989 resulted in rapid development of higher education in Slovakia.

After year 1990 availability of higher education increased in many regions of Slovakia. A new type of study was introduced – bachelor's degree. With the opening of this type of higher education content and organizational forms of higher education have diversified. The main problem at universities has been sadly inflexible structure of study programs which do not react quickly enough to needs of regions and requirements of labour market.

Since the year 1990 up to 2014 we saw 26 new universities founded in Slovakia, currently we have 20 public, 3 state and 13 private universities a many detached institutes in the regions of Slovakia. Important role in this increase play private universities whose significance was originally devoted to improvement of regional coverage with higher education. In the end 6 private schools are located in Bratislava. After law number 131/2002 regarding universities the founding of universities has been simplified, before this law was passed the universities had to be founded via an official law passed in national parliament. Despite the increase in number of universities we have to note that their localization is not uniform which might be one of reasons behind regional difference in educational level. Another problem is inflexible structure of study programs which fails to meet the requirements of regions and labour market.

3 UNIVERSITY STUDENTS AND GRADUATES

With the increase in number of universities the number of students in Slovakia increased as well. In years shortly after World War 2 the number of students increased 4 times and number of women 8 times. In following 20 years this number of students has not even doubled. In the

year 1990 52 669 (see annex 2) students studied at Slovak universities. Right before the dissolution of Czechoslovakia in year 1992 studied at 13 Slovak universities (50 faculties) 55 564 daily students (47 % women) and 7 281 studied externally and 1 446 were foreign student (and 338 were women). A share of students on Slovak universities in former Czechoslovakia doubled during years 1945 to 1992. The share of students at Slovak universities was 15,7% in 1945 and 30,3% in 1992 out of all university students in Czechoslovakia. Higher education has been evolving differently in both state after the dissolution of Czechoslovakia.

The number of students at Slovak universities saw huge increase until year 2009. In 2000 there were 123 509 students, in 2006 there were 198 770 students and in year 2008 about 209 517 students studied at Slovak universities. These changes were reflected on the increase of economically active population with university degree.

Since the year 2009 the number of students started to fall. Demographic reasons aside the reasons are partial loss of interest in studying at university among young people and the fact that they prefer to study in Czech Republic.

Table 1: number of students in selected years

2000	2006	2009
123 509	198 770	208 643

Source: UIPS

Institute for information and prognosis of education (ÚIPŠ) published statistics that show 18 out of 20 Slovak public universities recorded decrease of students. In years 2009-2012 the biggest fall recorded Technical university in Košice (10 952 students less which equals to 11% drop compared to year 2009). Matej Bel University in Banská Bystrica lost 10 032 students (8,7%), similar situation was at Catholic University in Ržžomberok (6 391 less students). Only 2 universities gained more students, University of veterinary medicine and pharmacy in Košice gained 2 018 students (1,6% increase) and University of Cyril and Metod in Trnava gained 6 248 students, meaning 7,1% increase (see annex 3 attached). Selected private universities saw a decrease in number of students: University of Health Care and Social Work of St. Elizabeth 1,6%, Technology Institute of Dubnica 2,4% and University in Sládkovičovo 3,2% (annex 4 attached for years 2010-2013). In the year 2011/2012 up to 155 000 students studied on public universities which is 6 561 lower than in 2004/2005 (annex 6 and 7). Number of daily students remained unchanged, only external students lost interest in every region of Slovakia.

During 2014 over 62 000 people graduated at both public and private universities which is 5,73% decrease after previous year. This situation was caused mainly by lower number of graduates who studied externally (3 127 less than in previous year).

The number of applicants reached 48 961 people who wanted to study at both first and second university degree which is 5 600 less than in 2013. Slovak applicants together with foreigners filed 90 856 applications which is lowest recorded number in past years.

We can still claim that both international and national statistics consider us to be among the leaders when it comes to number of university graduates. The establishment of first university degree (bachelor) does not reflect the real situation in Slovakia. Even though in reality we belong to OECD countries with highest availability of tertiary education we are still not better than other developed countries. When compared to other developed countries the main problems of Slovak tertiary education is low quality and weak position of graduates on labour market.

After the graduation significant part of graduates remains unemployed or finds a job in different area than what they studied for. This is caused by weak connection between universities and labor market which results in a lag behind the needs of economy. "Profesia" company prepared

a ranking of university success for a third year in a row based on demand of employers for graduates from specific schools. Best chance to succeed on labor market after graduation have graduates from IT oriented faculties. Very low interest is in pedagogical graduates but also widely preferred law schools.

4 QUALITY REVIEW OF UNIVERSITIES IN SLOVAKIA

For this part of our research we decided to use results of Academic Ranking and Rating Agency that analyzes education and research at Slovak universities and their faculties. The criteria used are divided into several groups: 1) education process (number of students, teachers and structure of teachers), 2) attractiveness of education (interest in faculty/university, share of foreign students, student mobility, unemployment), 3) science and research (number of publications and quotations or significant works of art), 4) PhD studies (share of graduates on student population) and 5) grant success rate (domestic and foreign grants, total grant income on one creative worker).

The aim of this evaluation is to lower information asymmetry between universities and offer potential students a review based on widely understandable criteria that may help them decide where to study. For the purpose of such review all universities are contacted, both private and public ones. Not all private universities publish all types of data needed which might result in worse position than it actually is. There are some private universities which despite different income sources try to provide reviewer with appropriate data such as University of international business, Central European university in Skalica, Paneuropean university and Danubius university. Eight faculties of these universities were evaluated in 2015 review but data they provided could not be verified by 3rd party (independent institution).

In 2015 together 112 faculties were evaluated, 104 were public and 8 private in 11 groups of fields of study. For many years several faculties are occupying top positions, such as: Jesenius medical faculty UK, Faculty of chemical and food technology STU, Faculty of social and economic sciences UK, Economic faculty TUKE and Law and pedagogic faculty in Trnava. One needs to realize that every ranking is based only on selected criteria and methods.

One of the most important criterion is PhD studies which we focus on. The current situation can be described as decrease in number of PhD students which is now visible on best faculties. Since 2011 we can see a drastic decrease, during past 4 years the number of PhD students dropped by 25%, about 3 000 students. Not only numbers but structure changed as well. In 2003 there were 6 922 external and 2 295 daily students. Today the daily students represent 60% of all PhD students. In 2015 there were 5 053 daily and 3 742 external PhD students. The decrease in numbers might be a result of change in financing PhD studies by the Ministry of Education. This change is slowly affecting even the best faculties which might threaten future academic and research system.

CONCLUSION

When look back and evaluating the evolution of universities in Slovakia their decentralization has perhaps not been very important because significant number of current universities located in regions has its origins in detached institutes of former university faculties. This quantitative increase of public and private universities correlated with the increase of students. Despite the fact that private sector plays important role the public universities face competitive pressure from other public universities, these schools are fighting for same students. The main reason for this fight is the redistribution system of public funds which is highly based on per-student payments. In any way this leads to a certain quality of

accepted applicants. Currently we are facing a decrease in number of students and growing share of Slovak students studying on Czech universities (also more foreigners study in Slovakia). Planned amount of enrolled students (total capacity) is only slightly lower than cohort of students coming out of high schools (18-19 years old). Some fields of study see significant decrease of interest (for example law schools) and natural differentiation is happening – the best faculties are becoming more attractive.

The truth is that Slovakia belongs to OECD countries with highest availability of tertiary education but does not excel among these countries. Number of graduates puts Slovakia into OECD average. In comparison to developed countries the main issue of our university education is low quality and weak position of some graduates on labor market. After graduates many people become unemployed or work in a field different from what they studied. It is caused by weak link between university education and labor market which is increasing a lag behind the needs of economy.

Profesia company for a 3rd year in a row prepared a list of universities based on demand for graduates. Best chance to find a job have graduates from faculties focused on IT sector, on the other hand very low chance have graduates of pedagogy and law.

Table 2: difference between student's and employer's interest

Employers	Students
1. IT	1. Law
2. Construction	2. Economy
3. Economy	3. Arts
4. Social sciences	4. Philosophy
5. Arts	5. Social sciences
6. Natural sciences	6. Healthcare
7. Engineering	7. Pedagogy
8. Technology	8. Natural sciences
9. Philosophy	9. Agriculture
10. Pedagogy	10. Technology

Source: ARRA and Profesia: Interest of employers and students in universities, p. 20

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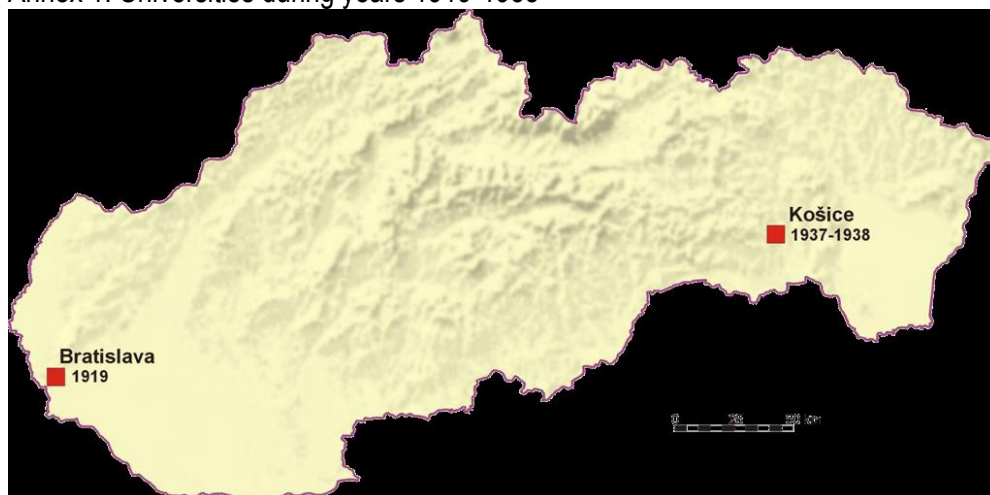
REFERENCES

- [1] BECKER, S.G.: Underinvestment in College Education? Available at: <<http://www.jstor.org/discover/10.2307/1815038?uid=3739024&uid=2&uid=4&sid=21101702942823>>. quoted 26.2.2013.
- [2] BENČO, J. (2002): *Ekonomía vzdelávania*, Bratislava: IRIS, 2002, 57-59 s., ISBN 80-89018-41-6
- [3] DOBEŠ, M., (2001): *Ľudsky kapitál a výkonnosť ekonomiky*, Bratislava, 2001. available at: <http://www.saske.sk/stredisko/ludsky_kapital.pdf>, [quoted 10. 2. 2014]
- [4] KAMENIČEK, J. (2003): *Lidsky kapital. Uvod do ekonomie chovani*. Karolinum, Praha, ISBN 80-246-0449-3
- [5] GURŇÁK, D., KRIŽAN, F., LAUKO., V., 2009: *Lokalizácia vysokých škôl na území Slovenska v časovo-priestorových súvislostiach*. In: *Úloha univerzít v regionálnom rozvoji*. Košice: Univerzita Paula Jozefa Šafárika, 64-83. ISBN 978-80-7097-791-0. 1
- [6] KOUŘILOVA, J. (2009): *Vyvoj vysokych škol v ČR po r. 1998 a jejich regionalni dostupnost*. In: *Regionalna a miestna v znalostnej ekonomike. Recenzovany sbornik mezinarodni konference*, Bratislava 26.11.2009, ISBN 978-80-225-2844-3(CD-ROM)
- [7] PĽAVČAN, P. (2006): *Vedomostna spoločnosť v Slovenskej republike*. Bratislava: Merkury, s.r.o., ISBN 8089143-40-7
- [8] SMITH, A. (2000): *Ethnicity, Economic Polarization and Regional Inequality in Southern Slovakia. Growth nad Change*, Journal of University of Kentucky. Volume: 31
- [9] VLČKOVA, V. (2010): *Vývoj a rozmiestnenie vysokých škôl na Slovensku – odraz v regionálnej štruktúre vzdelania ekonomickou aktívneho obyvateľstva*. Bořetice: KVS a RR EU-NHF, 16.- 18.6. 2010
- [10] VLČKOVÁ, V.: *Niekoľko poznámok k vývoju vzdelania na Slovensku, jeho vplyvu na rozvoj ľudských zdrojov a regionálne disparity*. In: *Regionálna a miestna verejná správa v znalostnej ekonomike: recenzovaný zborník prác z medzinárodnej vedeckej konferencie*, Bratislava, 2009. XXVII-1-9 str. ISBN 978-80-225-2844-3.
- [11] VLČKOVÁ, V. - IVANIČKOVÁ, A.: *Obyvateľstvo a urbánna dimenzia formovania ľudského kapitálu*. EKONÓM, 2009. ISBN 978-80-225-2852-8.
- [12] VLČKOVÁ, V. – KOUŘILOVÁ, J. *Vyvoj vysokeho školstvi na uzemi Česke a Slovenske republiky, regionalni studia czech regional studies, 02/2010*
- [13] WALTEROVÁ, E. a kol.: *Úloha školy v rozvoji vzdelanosti*. 1.diel. Brno: Paido, 2004, 26 str. ISBN 978-80-8084-874-3.

- [14] Universities 'portal, available at: <<http://www.portalvs.sk>>. Quoted 1.3.2015.
- [15] Center for research and development of education: Human capital and investments into education. Available at: <http://www.saske.sk/stredisko/index_soubory/page0009.htm> Quoted 24.2.2013
- [16] School system in Slovakia, available at: <<http://www.absolvent.sk/showdoc.do?docid=270>> Quoted 4.4.2015.
- [17] Education and labor market. Institute for employment. Available at: <<http://www.iz.sk/sk/projekty/skolstvo-a-trh-prace>>. Quoted. 9.4.2015.
- [18] Statistical yearbook – universities 2012/2013. Data up to date for 31.10.2012. Available at: <http://www.uips.sk/prehlady-skol/statisticka-rocenka---vysoke-skoly>.
- [19] Statistical office of the Slovak republic. Available at: <<http://portal.statistics.sk/showdoc.do?docid=4>>. Quoted 5.2. 2016.
- [20] SITA 2016 in webnoviny: available at <<http://www.webnoviny.sk/slovensko/clanok/993882-fakty-vysokoskolakov>>. Quoted. 21.2.2016.
- [21] REVIEW OF UNIVERSITY FACULTIES 2015. Ranking of university faculties in SR based on comparing quantity and quality criteria of research and education. Academic ranking and rating agency (ARRA), November 2015

ANNEXES

Annex 1: Universities during years 1919-1938



Authors: V. Lauko, D. Gurňák, F. Križan a L. Tolmači, PFUK, Bratislava

Annex 2: Number of universities, students and graduates during 1945-1991

Universities in Slovak republic									
Academic year	Number of		Daily studies			Studying while working		Graduates	
	schools	faculties	students	women	foreigners	students	women	daily	While working
1945/46	3	12	8 672	1 618	.	.	.	159	
1948/49	4	15	8 950	1 693	86	.	.	733	
1950/51	7	20	8 113	1 586	86	2 403			
1955/56	12	33	14 216	3 236	77	7 215	1 589	1 618	170
1960/61	16	33	20 298	7 900	196	9 149	2 481	2 777	1 221
1965/66	12	33	31 721	13 165	529	17 212	5 613	3 937	1 732
1970/71	13	37	39 755	17 282	732	91 470	3 419	4 729	1 453
1975/76	13	38	47 511	20 374	974	13 798	6 226	7 924	871
1980/81	13	42	56 453	24 673	1 180	19 159	8 660	9 759	4 409
1984/85	13	42	51 031	23 346	1 127	10 635	4 750	11 243	2 330
1991/92	13	50	52 669	24 679	1 681	9 434	4 969	7 913	3 826

Source: own processed data from Historical yearbook of Czechoslovak socialistic republic, Prague, 1985 and statistical yearbooks of Czech and Slovak federal republic 1992

Annex 3: Number of students, gain/loss index for 2009-2012

Technical University Košice	10 952 students, -11,0 %
UMB Banská Bystrica	10 032 students, -8,7 %
Catholic University in Ružomberok	6 391 students, -8,2 %
University of Trenčín	3 423 students, - 8,0 %
University of Economics in Bratislava	9 412 students, - 8,0 %
Selye university Komárno	2 031 students, - 7,9 %
University of Trnava	5 838 students, - 7,2 %
UKF Nitra	10 147 students, - 7,1 %
University of Žilina	9 795 students, - 6,6 %
Technical University Zvolen	4 041 students, - 5,7 %
SPU Nitra	8 659 students, - 4,4%
UPJŠ Košice	7 507 students, - 3,5 %
STU Bratislava	15 094 students, - 3,1 %
University of Prešov	9 344 students, - 2,3 %
VŠMU Bratislava	958 students, - 1,1 %
Academy of Arts Banská Bystrica	511 students, - 0,6 %
Comenius University Bratislava	24 832 students, - 0,5 %
VŠVU Bratislava	589 students, - 0,0 %
University of Veterinary Medicine and Pharmacy Košice	2 018 students, + 1,6 %
UCM Trnava	6 248 students, + 7,1 %

Source: UIPS 2013

NT region	13058	8298	2150	1729	-	-	-	-	-	-	-	-
BB region	10074	9359	1926	2607	-	-	-	-	-	-	-	-
ZA region	10785	5489	1408	316	-	-	-	-	-	-	-	-
SUM	106194	50367	19134	9773	828	2651	52	10	-	-	-	-
SUM	156 561		28 907		3479		62		-		-	

Source: authors based on Annual report of university education 2004, data to 31.10.2004. Available at: <http://www.minedu.sk/vyrocnne-spravy-o-stave-vysokeho-skolstva/>.

Annex 7: Number of students and graduates in Slovak regions based on university founder

2011/2012												
	Public universities				Private universities				State universities			
	students		graduates		students		graduates		students		graduates	
	daily	external	daily	external	daily	external	daily	external	daily	external	daily	External
BA region	46622	5699	14349	2054	5043	17393	2252	7432	1607	1531	493	954
KE region	19118	2958	6201	1301	1593	1352	719	672	-	-	-	-
PO region	7239	2323	2199	981	417	407	146	179	-	-	-	-
TN region	2467	1253	982	608	986	4818	146	1619	-	-	-	-
TT region	8720	3374	2970	1184	891	2232	413	1103	-	-	-	-
NT region	16211	5798	7865	2283	-	-	-	-	-	-	-	-
BB region	11245	4537	2630	1356	24	9	-	-	-	-	-	-
ZA region	13416	4030	3476	1911	-	-	-	-	148	90	-	99
SUM	125038	29972	40672	11678	8954	26211	3676	11005	1755	1621	493	1053
SUM	155 010		52 350		35 165		14 681		3376		1546	

Source: authors based on Annual report of university education 2012/2013, data to 31.10.2012. Available at: <http://www.uips.sk/prehlady-skol/statisticka-rocenka---vysoke-skoly>.

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