GEOGRAFICKÝ ČASOPIS / GEOGRAPHICAL JOURNAL 69 (2017) 4, 313-337

NEOLIBERALIZATION OF THE HIGHER EDUCATION IN SLOVAKIA: A GEOGRAPHICAL PERSPECTIVE

René Matlovič, Kvetoslava Matlovičová*

* University of Prešov, Faculty of Humanities and Natural Sciences, Department of Geography and Applied Geo-informatics, Ul. 17. Novembra 1, 080 01 Prešov, Slovakia,
rene.matlovic@unipo.sk, kveta.matlovicova@unipo.sk

Neoliberalization of the higher education in Slovakia: a geographical perspective

The aim of the study is to discuss the conceptual frame of the neoliberalization of higher education, to point out the changing legal provisions accompanying the progressive adoption of neoliberal principles in the management of higher education institutions in Slovakia, as well as to point out the data sources concerning higher education and to analyze some parameters of the existing system in Slovakia and their dynamics after 1989. Particularly, the development of the institutional structure (universities, faculties and detached sites), the development of the number of students by groups of study fields, their spatial distribution, financing and the education and research performance of public higher education institutions are addressed. The quoted parameters are tracked in different time intervals after 1989. The geographical aspects are applied to the study of spatial distribution of tracked parameters by NUTS 2, NUTS 3 regions, higher education centres, and in some cases, faculty centres.

Key words: faculties, geography of education, higher education, neoliberalization, universities, Slovakia

INTRODUCTION

We are living in a period of intensive discussions about the present situation and the desirable paradigmatic change of systems of higher education and science. The discourse is fed by studies accomplished by representatives of several scientific disciplines: geography, sociology, economics, history, pedagogy, and the like (for instance, Kwiek 2004, Ručinská et al. 2007, László 2008, Liessmann 2009, Melosik 2009, Hejwosz 2010, Kosová and Porubský 2011, Kaščák and Pupala 2012, Barber et al. 2013, Šima and Pabian 2013, Hanová et al. 2016, Matlovič 2014, Chotaš et al. 2015 and Rehák et al. 2015).

The history of interest in this issue dates back to the 18th century, particularly with A. Smith, who emphasised the importance of knowledge for economic development (Smith 1776 in Rutten et al. 2003, p. 1). By the end of the 20th century, this subject found its reflection in the analyses of actors and processes connected with the origins and pursuit of the capacity to create and maintain the fresh knowledge in regions anchored in the theory of learning regions. In this context, several authors pointed to the role of higher education institutions (for instance, Etzkowitz and Leydesdorff 1996, Keanne and Allison 2000). Part of this discourse was the elaboration of several concepts concerning creativity, such as the creative environment, creative class and creative cities – for instance, studies of G. Törnqvist, R. Florida, and Ch. Landry (Wolaniuk 2010, p. 14 – 16).

In the same period, social sciences revived their interest in spatial aspects of the investigated phenomena and processes which is referred to as the spatial (geographical) turnover. This is how several interdisciplinary and transdisciplinary re-

search orientations emerged (Warf and Arias 2009, p. 3 – 4), among which are the geography of higher education institutions (for instance, Rutten et al. 2003, Wolaniuk 2010, Dobbins 2011, Jöns and Hoyler 2013 and Harrison et al. 2016) and geography of science (for instance, Shapin 1998, Simões et al. 2003, Powell 2007, Meusburger et al. 2010 and Gál and Ptáček 2011). This effort belongs to the geography of education and educational systems, which according to Meusburger (2017, p. 1) "deals with the causes and consequences of spatial variations in the provision and consumption of education; the impact of local milieus and of social and cultural environments on educational attainment; spatial variations in the sociodemographic structure of the teaching profession; the influence that political systems, educational policies, and demographic change have on location patterns of schools and universities; the spatial mobility of scholars, students, and ideas; and other issues where places, spatial relations, and social environments have an impact on educational processes."

There are several authors – Slavík and Lišková 1996, Slavík and Plavčan 1999, Gurňák et al. 2009, 2010, 2011 and 2012 Lauko et al. 2011 and 2013 and Nestorová-Dická 2013) who are involved with this subject in Slovak geography. One of the dominating features of the discourse in the social sciences is the assessment and critique of the neoliberalization of educational systems that took place in Slovakia after 1989 (for instance, Kaščák and Pupala 2011 and 2012). Geographical literature of the Slovak provenance contains above all studies dedicated to research situated in the context of education geography. The study of spatial disparities in the provision of educational services in the scope and quality of educational infrastructure is its domain. Regarding the studies of universities important results were obtained in the delimitation of regions and the commuting of students of individual higher education institutions taking into consideration the forms of studies and identification of some developmental tendencies in their distribution (Lauko et al. 2011).

Increasing interest in the issue of higher education and innovation led to the IGU Commission Dynamics of economic spaces to the establishment of two special sections in the frame of geographical conferences in 2014 and 2015. The first of them was the section Dynamics of Knowledge Sectors in the Post-socialist Countries at the IGU Regional Conference held in 2014 in Krakow and the second was Geography of Higher Education and the Production of Knowledge at the 2015 EUGEO Congress in Budapest.

The aim of the study is to discuss the conceptual frame of the neoliberalization of higher education, to point out the changing legal provisions accompanying the progressive adoption of neoliberal principles in the management of higher education institutions in Slovakia, as well as to point out the data sources concerning higher education and to analyze some parameters of the existing system in Slovakia and their dynamics after 1989. Particularly, it concentrates on the development of institutional structures (higher education institutions, faculties and detached sites), developments in the number of students and teachers, structure of students by groups of study fields and their spatial distribution, financing and performance of public higher education institutions in education and research. The quoted parameters are tracked in different time intervals after 1989. The geographical viewpoint is applied to the study of spatial distribution of the parameters by NUTS 2 and NUTS 3 regions, centres of higher education institutions and in some cases also centres of faculties.

CONCEPTUAL FRAME OF NEOLIBERALIZATION

The ongoing academic discussion concerns the identity crisis of university/ higher education institution as an institution. The Humboldt model that emerged by the beginning of the 19th century and gradually dominated in European countries is losing its position. This tendency is attributed to the effects of several factors. The most frequently quoted are the paradigmatic changes provoked by the post-modernist critique of the traditional attitude to the truth, neoliberalization tendencies in the administration of higher education and science and the onset of new information-communication technologies (Matlovič 2014). Neoliberalization means that the position of higher education institutions has shifted to academic capitalism due to the effects of globalising forces (Slaughter and Leslie 1997, p. 67).

In general, the complex academic administration and regulation of higher education institutions is replaced by a policy that is subject to neoliberal values promoting the free market and it equally markets the approaches of knowledge management. Academic culture is substituted by the culture of auditing. Financing systems of universities adapt to the model of multisource financing which involves decreasing support from the public budgets and the profuse participation of private resources. Performance, contract and project funding is enforced. Such an approach stimulates commercialisation and commodification both in the area of education (maximisation of numbers of students) and in the area of research (orientation to marketable results or those applicable in the political/economic practice). Commodification means that consumer culture enters the academic grounds and the student is treated as a client. This client-oriented model emphasizes the comfort and wellbeing of students and the improvement of communication and human relationships. The other side of the coin is less pressure on effort and the quality of students' work, recruiting instead of the selection of students qualified for higher education and because of the admission of the maximum number of students and also a low concentration of talented and motivated undergraduates (Kaščák and Pupala 2012 and Arum and Roksa 2014).

Implementation of the Bologna process led to the increased subordination of the European universities and higher education institutions to neoliberal values. A liberal approach to education characterised by the enforcement of the need to educate the highest possible number of persons at the highest possible level and expecting the positive effects for all spheres of life has been chosen (Boczkowski 2010, p. 40). The result is the massification of higher education. During the first decade of the 21st century, the number of enrolled higher education students in the world increased from 100 million to 150 million (Altbach et al. 2012, p. 4). Another effect of neoliberalization is the pressure on a continuous demonstration of performance along with the pressure on increased quality, that is, excellence. Universities strive for better performance and higher quality (measured by means of a set of indicators) than those of the competing universities (Simons and Maschelein 2009, p. 5 – 9). Higher education institutions became subject to evaluation and comparison via rating and ranking scales prepared by agencies. Many of them adapt their strategies and processes to reach the most prominent positions (Rauhvargers 2011). It was the Academic Ranking and Rating Agency (ARRA) that started in 2005 in Slovakia and which has so far produced 11 of such evaluations.

LEGISLATIVE AND ECONOMIC FRAME OF HIGHER EDUCATION SYSTEM IN SLOVAKIA

Transformation of the higher education system in Slovakia began in 1990 by the adoption of a new law (Law No. 172/1990) by the Federal Assembly of the Czech and Slovak Federative Republics. It introduced academic freedoms and autonomous management on two levels: higher education institution and faculty while the faculty was bestowed the legal entity. All higher education institutions remained state institutions. They were financed from the state budget based on historical principles. It was an index system which considered the preceding year subsidies and inflation. It means that it did not contain any mentionable competitive elements and did not stimulate activity and/or efficiency. Internal grant agencies (GAV in 1990 – 1995, VEGA and KEGA since 1996) constituted an exception as they distributed part of institutional funding on a competitive base to successful research projects. Pursuing the legal provisions, the Accreditation Commission was established as a consulting body of the Government of the SR. The foundation of a new higher education institution or the renaming of the existing one was possible under the law adopted by the National Council of the SR (before 30 Sept. 1992 it was the Slovak National Council) at the recommendation of the Accreditation Commission. This process functioned based on the governmental proposals of law or via deputies' proposals which reflected the interests of individual regions in the establishment of a higher education institution. The Higher Education Law from 1990 was amended four times.

The 1996 amendment (Law No. 324/1996) offered the possibility to found a non-state higher education institution and approve activities of branches of a foreign one but again via the adoption of a law. In 2000, the Government approved the Conception of Further Development of Higher Education in Slovakia for the 21st century. Its main objective was the implementation of the Bologna process principles.

The new law about higher education was adopted in 2002 (Law No. 131/2002). It introduced a three-degree system of study programmes and a credit system. A new categorisation of higher education institutions contained public, state and private institutions. The majority of them were transformed from the state budgetary organisations into public higher education institutions[1], which resulted in a distinct increase of their autonomy in the economic sphere. Faculties remained autonomous units but they lost their legal identity. The former state-owned real estate (buildings, plots and other property) administered by higher education institutions passed into their ownership. Administrative boards were charged with observation of public interest and a multisource model of funding of public higher education institution was introduced. Subsidy of the public budget was distributed to public higher education institutions based on their performance in education and research by means of the annually amended methodology (for more details see Mederly 2009). The influence of education gradually diminished in favour of research re-

[1] In 2002, there were 23 higher education institutions in Slovakia, out of which 19 transformed into public higher education institutions, 1 non-state higher education institution became private and 3 remained state higher education institutions.

sults (especially before 2011) and competitive elements[2]. The process of founding a private higher education institution was simplified as it depended on sole governmental consent and not on the adoption of a law as before.

The 2002 law was amended 42 times in the following years. The most important changes concerned the classification of higher education institutions into qualitative categories (universities, not classified higher education institutions, and specialised higher education institutions). The accession of Slovakia to the European Union in 2004 brought new stimuli for the higher education institutions and offered the option to obtain funding from financial schemes supported by the EU. The 2007 Amendatory Act (Law No. 363/2007) allowed the public higher education institutions to collect school fees for the external study forms, for undue prolongation of the standard duration of the study and the daily form of concurrent study in the same study grade. Simultaneously, an option to draw a bank credit/loan was introduced. The above-mentioned changes in an overwhelming majority of cases reflected the application of neoliberal values in the higher school education policy in Slovakia.

The outlined conceptual frame and the overview of the legal and economic frames in which the higher education institutions operate reveals that the gradual adoption of neoliberal principles in the Slovak higher school education after 1989 manifested more intensively in the second part of the transformation period, that is, after 2002.

USED DATA SOURCES AND METHODS

Databases tracking the dynamics and status of higher education are comparatively abundant. The basic data source about the position of Slovak higher education in international context is the yearbook Education at a Glance published by the OECD since 1998 (Slovakia became a member of this organisation in 2000). An important data source is Štatistická ročenka vysokých škôl/Statistical Yearbook of Higher Schools originally published as an offprint of the Statistical Yearbook of Education by the Institute of Information and Prognoses of Education. Since 2014, this activity has been carried out by The Slovak Centre of Scientific and Technical Information which publishes its data on its website (CVTI 2016).

Another data source used here is the annual report about the state of higher education published by the Ministry on its website (MŠVVŠ SR 2017a). The specifications of subsidies of the state budget to public higher education institutions is published every year on the website of the Ministry (MŠVVŠ SR 2017b) and is also an important information source concerning the performance of higher education institutions. Detailed information about individual schools is available from their annual reports published on their websites. Data that is part of the evaluation of individual faculties by the independent ARRA agency and other international ranking portals are of an accessory nature. Data about the number of Slovak students

[2] In 2002, funding of public institutions was allocated as follows: 8.7% observing the historical principle, 54.9% based on the performance in education, 9.7% based on performance in research and according to the quality of developmental projects, and 26.7% represented the amount allocated purposefully for the specific features and social support of students. In 2014, the historical principle was abandoned and 43.9% of subsidy was allocated based on research performance and quality (Devínsky 2016, p. 13).

attending Czech higher education institutions is available from the Czech SIMS database (MŠMT ČR 2017).

Our methodical approach is based on the geographical analysis of higher education according to regions (NUTS 2 and NUTS 3) and centres (towns and cities). The importance of tertiary education in individual centres is illustrated by the Index of Tertiary Education (ITE) which puts into a relationship the number of students at higher education institutions and the population number. The performance of higher education institutions is measured by several indicators: PERFOR – Proportion of performance component of subsidy from the state budget in 2009 – 2017, I – growth index of subsidy for performance in 2017/2009, FOGRE – proportion of funds obtained from international research grants in 2009 – 2015, OFGR – proportion of funds obtained from other foreign grants in 2009 – 2015, NAGRE – proportion of funds obtained from national research grants in 2009 –2015, PUBLI – proportion of publication outputs for the calculation of research subsidies in 2009 – 2016 and EDUC and proportion of performance in education for the calculation of wage subsidies in 2009 – 2017.

DYNAMICS OF INSTITUTIONAL STRUCTURE AND CENTRES OF HIGHER EDUCATION IN SLOVAKIA IN THE PERIOD OF NEOLIBERALIZATION

In 1989, the number of higher education institution, faculties and detached sites distinctly increased due to the adopted changes of the legal frame. The increase of the number of higher education institutions was 2.5-fold. At the beginning of the transformation in 1989, there were 14 higher education institutions (2 universities, 8 higher education institutions, 3 military academies, and 1 police academy). The system also contained 5 independent faculties: 2 pedagogical and 3 theological ones). The overall number of faculties and higher education institutions not divided into faculties was 52. Ten towns and cities became seats of a higher education institution or faculty: Bratislava, Trnava, Nitra, Banská Bystrica, Zvolen, Žilina, Martin, Liptovský Mikuláš, Prešov and Košice.

In 1990 – 2016, 24 new higher education institutions were established; one of them disappeared after a short existence[3] and the number of military academies dropped from 3 to 1. In the first stage (1990 – 2001), 10 higher education institutions were established, 9 were state and 1 non-state institutions. The second stage (2002 – 2016) brought about 14 new higher education institutions: 1 state, 1 public and 12 private institutions. One private higher education institution disappeared shortly. Apart from that 6 foreign higher education institutions obtained authorisation to provide higher education in the territory of the SR. Nine new towns: Sládkovičovo, Skalica, Komárno, Piešťany, Trenčín, Dubnica nad Váhom, Púchov, Ružomberok and Banská Štiavnica emerged on the map of seats of higher education institutions or faculties. The spatial distribution of these new centres is not regular. Viewed in the context of NUTS 2, a prevailing part of them appeared in the region of Western Slovakia (7). Two centres are in the region of Central Slovakia and none was established in Eastern Slovakia.

[3] It was the Goethe Uni Institution seated in Bratislava which existed from 2012 to 2015. It contained 3 faculties: 2 in Bratislava and 1 in Piešťany.

During the observed period the number of faculties and higher education institutions not organised in faculties increased from 52 to 129. The number of new faculties was originally higher but some of them either disappeared or merged with other faculties[4]. The majority of new faculties provide social-science studies (44%), humanities (18.7%) or medical studies (13.3%) – Tab.1. The infiltration of neoliberal values also became obvious in the structure of new faculties. The majority of private schools developed the branches which maximised the economic efficiency of their activities. They were mostly social sciences and humanities. They were much demanded and their operation did not require any expensive laboratory infrastructure. Moreover, they performed for large groups of students, which made it possible to economise because of a reduced scope. In terms of the geographical distribution by NUTS 2 regions, the majority of institutions were established in Western Slovakia and in Bratislava (61.3%). The least of them exist in the region of Eastern Slovakia (17.3%). Regarding the level NUTS 3, the Administrative Region of Bratislava dominates (24%) followed by that of Trnava (16%) and Banská Bystrica (14.7%). The least share of new faculties corresponds to the Administrative Region of Žilina (6.7%) followed by those of Trenčín and Košice (8% each). New centres emerged first of all in Western Slovakia possibly because of the potential of Bratislava in the field of personnel which made it possible to open new institutions in its hinterland, for instance in Trnava, Sládkovičovo, Skalica, Trenčín, etc.

Tab. 1. Number of new faculties by groups of branches and NUTS 2 and NUTS 3 regions in 1990 – 2016

Group/region	BA	TT	NR	TN	ZA	BB	PO	KE	B	W	C	E	SR
Natural		1	1			2	1			2	2	1	5
Technical	2			2		1	1		2	2	1	1	6
Agricultural			2							2			2
Medical	4	1	1	1	1	1	1		4	3	2	1	10
Social	9	8	3	3	2	2	3	3	9	14	4	6	33
Humanities	3	2	3		2	1	1	2	3	5	3	3	14
Arts						4		1			4	1	5
Total	18	12	10	6	5	11	7	6	18	28	16	13	75

NUTS 2 Regions: B – Bratislava, W – Western Slovakia, C – Central Slovakia, E – Eastern Slovakia. NUTS 3 Regions: BA – Administrative Region (AR) of Bratislava, TT – AR of Trnava, NR – AR of Nitra – AR of Trenčín, ZA – AR of Žilina, BB – AR of Banská Bystrica, PO – AR of Prešov, KE – AR of Košice, SK – Slovakia

Source: Proper research.

In the first half of the second decade of the 21st century, extensive development of the network of centres providing higher education culminated in public higher

[4] They were two faculties at the Matej Bel University in Banská Bystrica (2005 and 2007), 1 faculty at the Alexander University of Trenčín (2010) and 3 faculties of the Goethe Uni Bratislava, one of them seated in Piešťany (2015). The reason was either loss of accreditation or economic problems.

education institutions opening their detached sites even earlier. Private schools contributed to this trend while they concentrated above all on external study forms. In 2014, the Slovak Centre of Scientific and Technical Information registered 119 detached sites in 62 localities that operated in the preceding years in the SR. The number of detached sites started to decrease due to stricter rules of the new comprehensive accreditation that started in 2014. In 2016, Slovak higher education institutions in the territory of the SR operated 27 accredited detached sites and other centres outside the seats of faculties[5]. In terms of NUTS 2 regions, most of them exist in the region of eastern Slovakia (12), followed by Central Slovakia (8), Western Slovakia, and (6) the Administrative Region of Bratislava (1). Distribution of these centres compensates to some extent the absence or low number of new seats of higher education institutions in eastern part of the country.

The present institutional basis of the Slovak higher education (2016) consists of 35 higher education institutions (Fig. 1), where 20 of them are divided into 112 faculties and 15 higher education institutions not divided into faculties. The faculties of eight higher education institutions are located outside their seats. Twenty of the quoted ones are higher education institutions, 12 are private higher education institutions and 3 of them are state higher education institutions. Apart from them, there are 6 foreign higher education institutions authorised to provide higher education in the territory of the SR. The distinct decrease of the number of detached sites, and so far isolated cases of recently closed faculties and higher education institutions may be the symptom of the consolidation of higher education institution network. The distribution of faculties and higher education institutions in Slovakia is highly irregular (Fig. 1). Eastern-western gradient is obvious. In the NUTS 2 region of Eastern Slovakia there are 2 centres, 7 are in Central Slovakia, while the regions of Bratislava and Western Slovakia have 9 centres. Three Administrative Regions are in the level of NUTS 3 regions with one centre (Bratislava, Košice, and Prešov), one AR with two centres (Nitra), three ARs with three centres (Trnava, Trenčín, and Banská Bystrica) and one AR with four centres (Žilina).

DYNAMICS OF NUMBERS OF HIGHER EDUCATION STUDENTS, GRADUATES AND TEACHERS IN SLOVAKIA AFTER 1989

The development in numbers of students at higher education institutions in Slovakia after 1989 reflects the gradual introduction of the liberal approach to higher education. It became evident with the progressive increase of students from 64,442 in 1989 when it grew with the exception of the year 1991 until 2009 culminating with 234,414 students (Fig. 2a). The main wave of massification was in the period 2002-2009 (Fig. 2a). The increase index in 2009 compared to 1989 reached 363.8%, that is, more than 3.6-fold an increase of number of higher education students. It started to decrease in 2009 reaching only 151,316 in 2016. Increase index compared to 1989 is 234.8% (Tab. 2).

[5] This number only concerns centres with granted accreditation to carry out study programmes. The seats of detached sites in 2016 were: Banská Bystrica, Banská Štiavnica, Bardejov, Bratislava, Dunajská Streda, Gabčíkovo, Košice, Levoča, Liptovský Mikuláš, Lučenec, Martin, Michalovce (2), Nové Zámky, Partizánske, Piešťany, Poprad (2), Prešov, Prievidza, Rožňava, Skalica, Spišská Nová Ves, Spišské Podhradie, Tatranská Javorina, Trstená and Žilina (*https://www.portalvs.sk/sk/morho*).

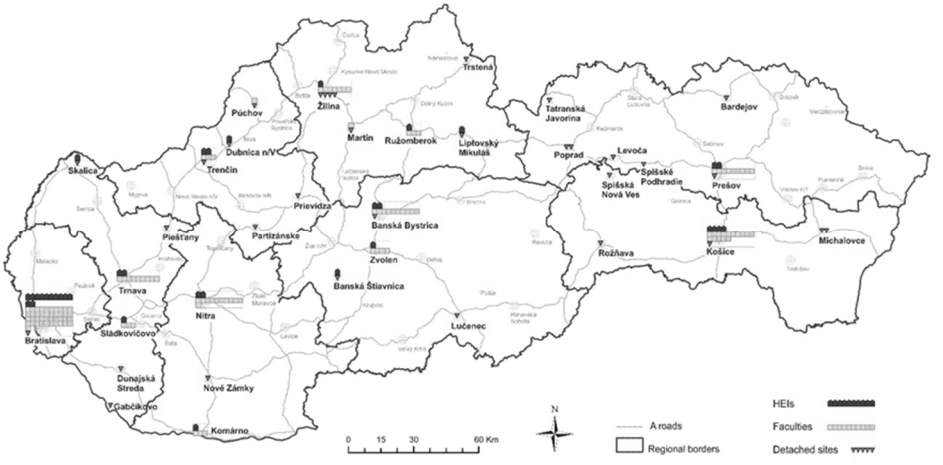

Fig. 1. Network of higher education institutions (HEI), faculties and detached sites in Slovakia in 2016

Comparatively distinctive disparities in the development of a number of students in the full time and part time forms of study are evident. In case of the full time form the increase was slow and culminated in 2009 (index of increase was 286.2). Slow decrease was observed after 2009 (Tab. 2).

In the case of part time students a marked increase of their numbers was observed in 1996-2007, when they culminated on the level of more than 8-fold of the 1989 numbers. This increase was connected with the saturation of demand of higher education by people working in sectors with increasing qualification requirements (for instance, public administration, police, health service, and the like) in the preceding period. New private higher education institutions accelerated the above-mentioned saturation as they concentrated on the part-time study form (Tab. 3). The rapid decrease of part-time students started in 2008. It was the sign of saturation of the mentioned demand and of the future withdrawal of private institutes from their position on the Slovak higher education market.

The cross-border mobility of higher education students considerably increased after accession of Slovakia to the EU. The balance though, for Slovakia is unfavourable. Although the number of foreign students (i.e. student with other than Slovak nationality) increases (Fig. 2, part d), it does not compensate great losses caused by departure of the secondary school graduates to study abroad (Tab. 4). The negative mobility balance peaked in 2012 and slightly dropped the following year. In terms of final destinations of the leaving Slovak student dominates Czechia where was 73.8% of the total number of Slovaks studying abroad in 2013. Hungary (7.4%), United Kingdom (4.2%) and Austria (4%) followed (Education at a Glance 2016).

Tab. 2. Indexes of increase of number of higher education students by forms of study, number of graduates, and number of intern higher education teachers in selected years between 1989 and 2016 (year 1989 = 100)

	1990	1995	2000	2005	2007	2009	2010	2016
Full time	107.2	147.6	190.4	235.6	266.9	286.2	276.9	215.0
Part time	97.2	107.7	360.3	672.2	827.9	774.2	718.7	290.4
Total	100.5	137.7	214.0	300.2	352.3	363.8	351.1	234.8
Graduates	87.8	110.5	198.9	316.5	422.2	702.0	716.8	523.6
Teachers	97.0	99.4	118.3	133.9	122.7	136.0	136.1	127.6

Source: proper recalculations based on the data of the Institute of Information and Prognoses of Education and the Slovak Centre of Scientific and Technical Information available at: *http://www.cvtisr.sk/cvti-sr-vedecka-kniznica/informacie-o-skolstve/statistiky/casove-rady.html?page_id=9724*

Tab. 3. Proportion of private higher education institutions in the overall number of students of both the full time and part time forms of study in selected years between 2002 and 2015 (in %)

	2002	2005	2007	2010	2013	2015
Full time	0.5	1.2	2.6	6.6	6.3	5.1
Part time	0.1	10.5	25.2	39.4	45.7	40.3

Source: proper recalculations based on the data of the Institute of Information and Prognoses of Education and the Slovak Centre of Scientific and Technical Information available at: *http://www.cvtisr.sk/cvti-sr-vedecka-kniznica/informacie-o-skolstve/statistiky/casove-rady.html?page_id=9724*

According to the available data of the Slovak Centre of Scientific and Technical Information data, 10,746 students with other than Slovak nationality studied at the Slovak higher education institutions in 2016. Most of them were Czechs (36.8%) followed by citizens of Ukraine (11.7%), Germany (5.9%), Norway (5.4%), Greece (4.9%), Poland (4.6%) and Serbia (4.3%). As far as dynamics is concerned, the share of Greek students decreased while the share of Ukraine students has increased in recent years.

The numbers of graduates during the 1990s increased only slowly (Tab. 2, Fig. 2c). It accelerated after 1997 and a further abrupt increase took place in 2007-2010 probably due to the transition to a three-degree system of education in the frame of the Bologna process. New bachelors joined the original graduates of master/ engineer and PhD programmes in this period. Since then a gradual decrease of higher education graduates is evident.

Analysis of the development of numbers of students in relation to that of higher education teachers showed considerable disparities (Tab. 2, Fig. 2b). A signi-ficant increase of the number of students was accompanied only by a moderate increase of teachers. While in 1989 higher education institutions employed 8,059 full time

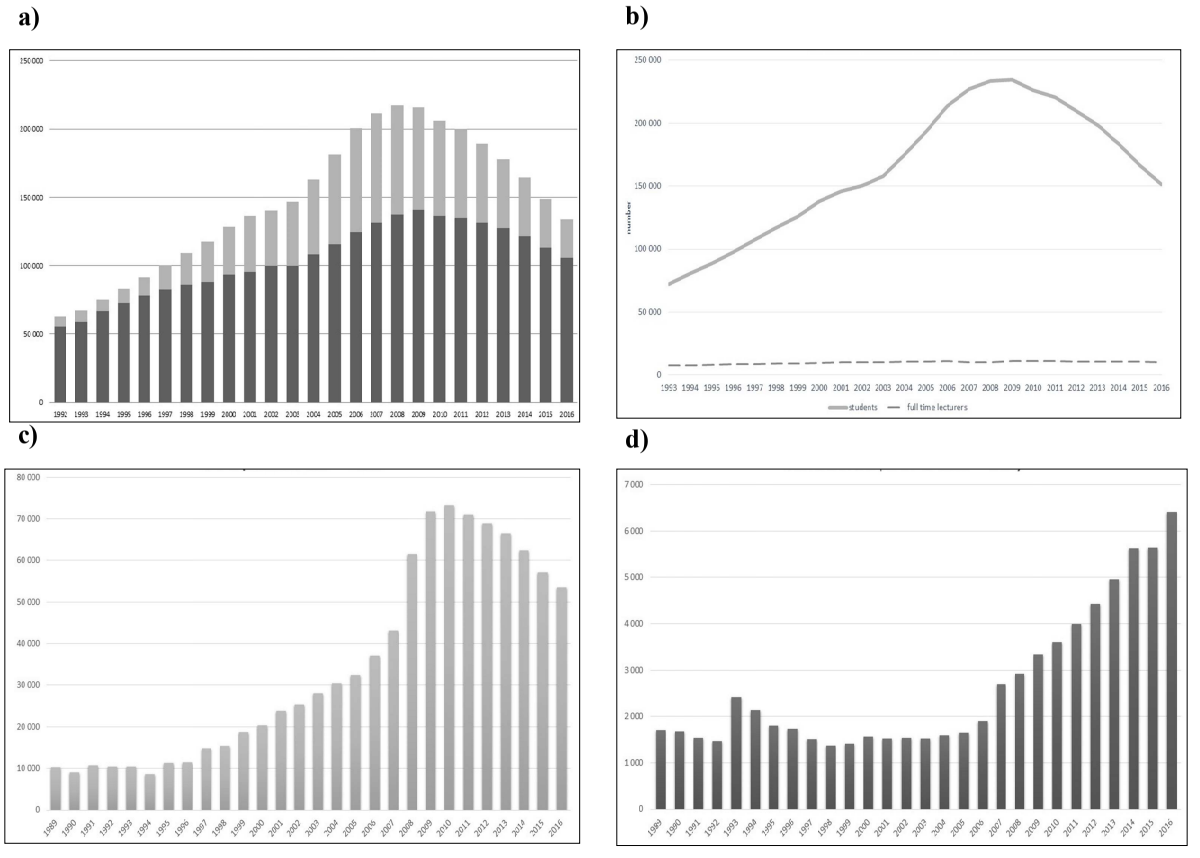

Fig. 2. Numbers of students, graduates, foreign students and teachers of higher education institutions in Slovakia in the period of 1989 – 2016

a) – development of HE students number (full time and part time), b) – development of HE students and full time lecturers, c) – development of HE graduates, d) – development of foreign students in full-time programmes.

teachers, in 2010 it was 10,970, the most in history. In the following years the number of teachers decreased and in 2016 it was 10,280. As a result, the number of students corresponding to one full time teacher in higher education institutions increased. In 1989, this index was 8.0. It progressively increased to 22.93 in 2007. Then it began to drop due to the accelerated decrease of number of students (14.72 in 2016). This development suggests that although in Slovakia there lived an increased number of higher education institutions, their overall staff potential remained relatively stable. On the other hand, it led to better efficiency and productivity of higher education institutions, which too, is an accompanying sign of the infiltration of neoliberal principles with dominating marketing approaches. With such an extra burden, teachers take on, what emerges is the question how to maintain the quality of study. The qualification of teachers in higher education institutions slightly deteriorated at the beginning. The proportion of professors and assistants of professors dropped from 36.9% in 1989 and to 32.75% in 2005. In the last decade, it started to improve and in 2016 professors and assistant professors accounted to 40.6% of the overall number of full time teachers in higher education institutions.

Tab. 4. Cross-border mobility of higher education students in the SR in 2004-2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
FS	1,587	1,641	1,904	2,699	2,915	3,338	3,595	3,995	4,430	4,953
SSA	15,719	18,777	22,982	24,850	27,084	29,320	33,304	35,585	36,455	32,924
BM	-14,132	-17,136	-21,078	-22,151	-24,169	-25,982	-29,709	-31,590	-32,025	-27,971

FS – students of other than Slovak nationality studying in higher education institutions in the SR, SSA – Slovak students studying abroad, BM – balance of mobility in pursuit of higher education.
Source: Slovak Centre of Scientific and Technical Information and Education at a Glance 2005 – 2016.

SPATIAL DISTRIBUTION OF HIGHER EDUCATION STUDENTS BY REGIONS AND CENTRES

The dynamics of spatial distribution of students in higher education institutions by NUTS 2 regions led to the weakening of the position of one region (Bratislava), one region strengthened its position (Western Slovakia) and two regions (Central and Eastern Slovakia) did not experience any notable change of their positions in the tracked period of 1989 – 2016 (Tab. 5). This territorial disposition clearly reveals the trend of spatial diffusion of higher education from Bratislava to its wider hinterland. Regarding the changing number of teachers, this development is comprehensible. The majority of new institutions relied on Bratislava's staff potential. The determining factor was the concurrent employment of higher education teachers at several institutions and the fact that some of them alternated teaching with the work at the Slovak Academy of Science. A closer look at the whole period shows the temporary strengthening of central Slovakia in 1989-2005 followed by the return to the position it held at the threshold of transformation. The position of Eastern Slovakia was slightly weakened before 2005 and later on it oscillated close under the level it held before the transformation.

Analysis of the share of individual NUT 3 regions (Administrative Regions) in the overall number of higher education students shows (Tab. 5) that the increase during 1989 – 2016 concerned 5 of 8 ARs. The greatest increase was recorded in the AR of Trnava, followed by those of Prešov, Nitra and Banská Bystrica. The greatest observed decrease was in the administrative region of Bratislava. A less noticeable decrease was in the ARs Žilina and Košice. The recent development (after 2010) confirms the strengthening of the administrative regions of Bratislava, Žilina and Prešov, the stagnation of Trnava and Nitra and the weakening of the position of Košice, Banská Bystrica and Trenčín.

The position of individual higher education institutions changed. Bratislava clearly dominated at the beginning of the period. Almost half of all higher education students of Slovakia studied there. The position of Bratislava started to weaken after 1992 and the drop of its share lasted until 2005 (32.1%). It was especially evident in the years 1995 – 2000 (Tab. 6, Fig. 3). In the following period, the share of Bratislava increased again to 38.2% in 2016. It means that Bratislava did not succeed in returning to the position it held at the beginning of the 1990s. Košice experienced a similar development. It was able to stop the decrease but only in the period between 2005 and 2010. After 2010, the position of Košice, in contrast to Bratislava, weakened again. The third most important centre in this regard became Nitra which at the end of the socialist era lagged behind Žilina. Its importance culminated at the turn of the millennia; since then its position has weakened. Trnava had the most marked strengthening of position, moving from 7th position to 4th. Its share grew during the 1990s until half of the first decade of the 21st century. It slightly decreased later and after 2010 it strengthened again. The importance of Prešov also increased although not as evidently as that of Trnava. The most marked increase was experienced in the second half of the 1990s and in recent years. Compared to the end of the socialist era, the position of Žilina weakened the most as it dropped from 3rd position to 7th. The greatest drop took place in the second half of the 1990s. Its share stabilised after 2010. Banská Bystrica greatly improved its position in the second half of the 1990s. However, it started to weaken later even though it is stronger than at the beginning of transformation period. Other men-tionable centres are those of Ružomberok, Trenčín, and Komárno. These are cities that saw an increase of their shares in the second half of the 1990s or in the first half of the first decade of the 21st century, when public universities were opened there. Later their position weakened (Ružomberok and Trenčín) or stagnated (Komárno). Dubnica nad Váhom, Sládkovičovo and Skalica form another group where the increase started in the second half of the first decade of the 21st century after the establishment of private higher education institutions. But a retreat from the 2010 position is also evident there.

It seems that the first wave of the development of higher education institutions accompanied by the development of the network of public higher education institutions in the second half of the 1990s led to the weakened position of the traditional centres (Bratislava, Košice, and Žilina) on the one hand and the strengthening of centres with new public higher education institutions (Banská Bystrica, Trnava, Ružomberok, Trenčín, Nitra, Prešov, and Komárno) on the other. The second wave joined the development of private higher education institutions (2002 – 2010) and strengthened new centres (Dubnica nad Váhom, Sládkovičovo and Skalica) as well

as Bratislava and Košice. Other centres lost a bit of their importance because the focus of external studies moved from the public to private higher education institutions (for instance Nitra, Trnava, Banská Bystrica, and Ružomberok). Recently, the development has become more selective. The close proximity of Bratislava to the original dominant position before the transformation continues because of the diversified network of public, state and private higher education institutions. The positions of Trnava, Prešov and Martin have also strengthened. The remaining centres either stagnate (Nitra, Žilina, Ružomberok, Zvolen, Komárno, Púchov, and Banská Štiavnica) or lose their positions (Košice, Banská Bystrica, Trenčín, Dubnica nad Váhom, Sládkovičovo and Skalica). The probable causes are various: a drop in the numbers of students at private higher education institutions, a drop in external students at public higher education institutions especially those with a technical specialisation[6].

Tab. 5. Proportions of students of higher education institutions in NUTS 2 and NUTS 3 regions in the overall number of higher education students in Slovakia (in the years 1989, 1995, 2000, 2005, 2010, and 2016)

NUTS 2/3	1989 (%)	1995 (%)	2000 (%)	2005 (%)	2010 (%)	2016 (%)	2016-1989 (%)
B	49.0	45.7	36.2	32.1	35.4	38.2	-10.80
W	12.6	17.3	23.3	25.9	26.8	24.6	12.00
C	17.8	16.5	20.5	23.1	17.4	17.1	-0.70
E	20.6	20.5	20.0	18.9	20.4	20.1	-0.50
BA	49.0	45.7	36.2	32.1	35.4	38.2	-10.80
TT	3.2	5.2	7.7	9.4	9.9	9.7	6.50
NR	9.3	12.2	13.	13.0	11.3	11.5	2.20
TN	0.0	0.0	2.0	3.5	5.5	3.4	3.40
ZA	10.8	9.1	7.0	11.5	8.7	9.2	-1.60
BB	7.0	7.4	13.5	11.6	8.8	7.9	0.90
PO	4.4	5.2	6.4	6.4	6.0	7.0	2.60
KE	16.2	15.2	13.6	12.5	14.4	13.1	-3.10

NUTS 2 regions: B – Bratislava, W – Western Slovakia, C – Central Slovakia, E – Eastern Slovakia. NUTS 3 regions: BA – AR Bratislava TT – AR Trnava, NR – AR Nitra, TN – AR Trenčín, ZA – AR Žilina, BB – AR Banská Bystrica, PO – AR Prešov, KE – AR Košice.
Source: proper recalculations based on the data of the Institute of Information and Prognoses of Education and Statistical Yearbooks of Higher Education Institutions (CVTI 2016).

[6] For instance, according to the data of the Slovak Centre of Scientific and Technical Information, the greatest relative inter-year drop of students in 2016 compared to 2015 (=100%) took place in the Technical University in Zvolen (87%), Alexander Dubček University of Trenčín (87.1%) and Matej Bel University in Banská Bystrica (87.4%). The greatest absolute decrease is attributed to the Slovak Technical University Bratislava (-1187), Matej Bel University in Banská Bystrica (-1139) and Comenius University Bratislava (-1002) – CVTI (2016).

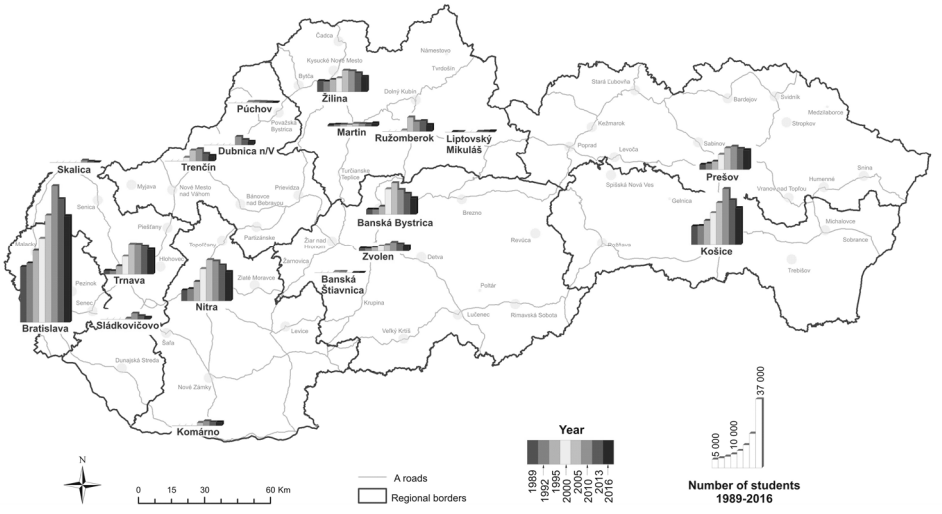

Fig. 3. Number of students in centres of higher education institutions and faculties in the SR in the selected years between 1989 and 2016

The importance of tertiary education in individual centres can be illustrated based on the Index of Tertiary Education (ITE) which puts into relationship the number of students at higher education institutions and the population number (Tab. 6). The ITE value in the frame of all centres is 0.1078. The level in individual centres of higher education indicates that in 2016 the function of tertiary education was the most important in Trnava (0.2053) followed by Nitra and Sládkovičovo. It was comparatively important in Bratislava, Ružomberok, Prešov and Banská Bystrica (over 0.1078). A lower than national level of ITE was observed in Žilina and Košice (Tab. 6).

Certain disparities are evident in the spatial distribution of full time and part time students. There is a higher share in the number of part time students than that of full time ones in the level of NUTS 2 regions particularly the administrative region of Bratislava and Western Slovakia. On the contrary, shares of Central and Eastern Slovakia in the overall number of full time students are higher than those of part time students. In the case of NUTS 3 regions there is a higher share of part time than full time students in three administrative regions: Bratislava, Trnava, and Trenčín. A slightly higher share of full time than part time students is observed in three regions: Nitra, Banská Bystrica and Prešov. A higher share of full time students than part time ones in the overall number of students is in two regions: Žilina and Košice (Tab. 7).

Tab. 6. Shares of centres of higher education institutions and faculties* in overall number of students in 1989 – 2016

Centre	1989 (%)	1992 (%)	1995 (%)	2000 (%)	2005 (%)	2010 (%)	2016 (%)	difference 2016-1989 (%)	ITE (2016)
Bratislava	49.0	49.60	45.70	36.20	32.10	35.40	38.20	10.80	0.1368
Košice	16.2	15.70	15.20	13.60	12.50	14.40	13.10	-3.10	0.0831
Nitra	9.4	10.00	12.20	13.60	12.20	10.20	10.30	0.90	0.2007
Trnava	3.2	2.80	5.20	7.70	9.10	7.80	8.90	5.70	0.2053
Prešov	4.4	5.20	5.20	6.40	6.40	6.00	7.00	2.60	0.1174
Banská Bystrica	4.4	4.30	5.00	10.90	9.40	6.40	5.90	1.50	0.1129
Žilina	9.6	8.60	7.70	5.80	6.30	5.30	5.40	-4.20	0.1005
Ružomberok	0.0	0.00	0.10	0.50	4.20	2.60	2.40	2.40	0.1338
Zvolen	2.5	2.10	2.40	2.20	2.00	2.40	2.00	-0.50	0.0706
Trenčín	0.0	0.00	0.00	1.60	3.20	3.10	1.90	1.90	0.0529
Martin	1.2	1.50	1.20	0.70	0.80	0.70	1.20	0.00	0.0314
Dubnica	0.0	0.00	0.00	0.00	0.00	2.20	1.20	1.20	0.0752
Komárno	0.0	0.00	0.00	0.00	0.90	1.10	1.10	1.10	0.0507
Sládkovičovo	0.0	0.00	0.00	0.00	0.30	1.50	0.70	0.70	0.1940
Liptovský Mikuláš	0.0	0.20	0.10	0.00	0.00	0.10	0.30	0.30	0.0128
Púchov	0.0	0.00	0.00	0.50	0.30	0.20	0.20	0.20	0.0148
Skalica	0.0	0.00	0.00	0.00	0.00	0.50	0.10	0.10	0.0152
Banská Štiavnica	0.0	0.00	0.00	0.40	0.30	0.00	0.00	0.00	0.0009
Piešťany	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000

Source: proper recalculations based on the data of the Statistical Yearbook of CSSR 1989 and Institute of Information and Prognoses of Education available at: *http://www.cvtisr.sk/cvti-sr-vedecka-kniznica/informacie-o-skolstve/statistiky/statisticka-rocenka-publikacia/statisticka-rocenka-vysoke-skoly.html?page_id=9596*

*Note: Number of students corresponds to the seat of the institution of faculty. In case of detached sites outside the seat of faculty the numbers of students correspond to the seat of faculty.

ITE - index of Tertiary Education.

Tab. 7. Selected indicators of higher education institutions by NUTS 2 and 3 regions in 2016

NUTS 2/3	Share of students with nationality other than Slovak in overall number of students (%)	Share of region in overall number of students with other nationality (%)	Share of region in overall number of full time students (%)	Share of region in overall number of part time students (%)
B	9.13	49.14	36.43	44.20
W	4.11	14.19	23.30	28.53
C	5.01	12.07	18.15	13.72
E	8.68	24.60	22.12	13.55
BA	9.13	49.14	36.43	44.20
TT	2.32	3.18	9.32	11.09
NR	3.36	5.41	11.97	9.72
TN	11.89	5.60	2.01	7.72
ZA	6.42	8.33	10.06	6.46
BB	3.36	3.74	8.09	7.26
PO	7.01	6.89	7.09	6.63
KE	9.57	17.71	15.03	6.92

NUTS 2 regions: B – Bratislava, W – western Slovakia, C – central Slovakia, E – eastern Slovakia. NUTS 3 regions: BA – Administrative Region Bratislava TT – AR Trnava, NR – AR Nitra, TN – AR Trenčín, ZA – AR Žilina, BB – AR Banská Bystrica, PO – AR Prešov, KE – AR Košice.
Source: proper calculations based on the data of and Institute of Information and Prognoses of Education and Statistical Yearbooks of Higher Education Institutions (CVTI 2016).

Part time students compared to the number of centres are more concentrated in Bratislava than the full time students. However, the picture is rather distorted because this aspect does not take into consideration detached sites such as the data about the numbers of students that are not available[7]. Some centres focus more on a part time form of study than on full time (for instance, Košice, Žilina, Martin, Nitra, and Trnava). The numbers of the two forms are balanced in other locations (for instance, Banská Bystrica, Prešov, Komárno, and Zvolen) and several centres operate more part time forms of studying (Ružomberok, Trenčín, Dubnica nad Váhom, Sládkovičovo, and Skalica) – Tab. 8.

[7] St Elisabeth University seated in Bratislava focuses on the part time form of study. In 2016, part time students of this University accounted even for 78.3% of the overall 8,541 students. This University operates a dense network of 15 detached sites in the whole territory of the SR. If recalculated to regions, the proportion of Bratislava in the overall number of part time students would be lower.

Tab. 8. Selected indicators in centres of higher education institutions and faculties in 2016

Centre	Total number of students	Total number of student with other than Slovak national-ity	Proportion of students with other nationality of the total number of students (%)	Proportion of centre in total number of student with other nationality (%)	Proportion of centre in total number of full time students (%)	Proportion of centre in total number of part time students (%)
Bratislava	57,862	5,281	9.13	49.14	36.43	44.20
Košice	19,889	1,903	9.57	17.71	15.03	6.92
Nitra	15,586	343	2.20	3.19	10.79	8.67
Trnava	13,470	140	1.04	1.30	9.13	8.16
Prešov	10,562	740	7.01	6.89	7.09	6.63
Ban. Bystrica	8,894	287	323	2.67	6.03	5.39
Žilina	8,149	126	1.55	1.17	6.25	2.54
Ružomberok	3,650	92	2.52	0.86	2.21	3.09
Zvolen	3,028	106	3.50	0.99	2.04	1.87
Trenčín	2,948	147	4.99	1.37	1.71	2.74
Dubnica n.V.	1,841	451	2.50	4.20	0.15	4.73
Martin	1,746	677	38.77	6.30	1.41	0.30
Komárno	1,740	239	13.74	2.22	1.18	1.05
Sládkovičovo	1,030	192	18.64	1.79	0.11	2.56
Lipt. Mikuláš	405	0	0.00	0.00	0.19	0.53
Púchov	266	3	1.13	0.03	0.15	0.25
Skalica	225	10	4.44	0.09	0.08	0.37
Ban. Štiavnica	25	9	36.00	0.08	0.02	0.00
SR	151,316	10,746	7.10	100.00	100.00	100.00

NUTS 2 regions: B – Bratislava, W – western Slovakia, C – central Slovakia, E – eastern Slovakia NUTS 3: BA – Administrative region of Bratislava, TT – AR Trnava, NR – AR Nitra, TN – AR Trenčín, ZA – AR Žilina, BB – AR Banská Bystrica, PO – AR Prešov, KE – AR Košice.
Source: proper recalculations based on the data of the Slovak Centre of Scientific and Technical Information as of 31 Oct. 2016 (CVTI 2016).

PERFORMANCE AND FINANCING OF PUBLIC HIGHER EDUCATION INSTITUTIONS BY REGIONS AND CENTRES

The financing of public higher education institutions is a multisource one. However, financing from the state budget still dominates and grant agencies supporting research are also financed from the state budget. Regarding the fact that the funding depends on the performance of schools, the spatial differentiation and dynamics of performance of public higher education institutions can be analysed by the centres and regions where they are seated[8]. Individual specifications of subsidies from the state budget to public higher education institutions published by the Ministry

[8] Because of the missing data, this analysis does not take into account the fact that the faculties of some universities seated in cities/towns and regions are different from the seat of their mother institution. The performance of these faculties in this analysis is attributed to centres and regions where the institutions are seated.

provides the necessary information at (MŠVVŠ SR 2017b). The basis of the analysis is the part of subsidy which reflects the performance. This part represents about 80% of the overall common subsidy to public higher education institutions[9]. The indicator of the proportion of performance component yields a comprehensive picture about the performance of public schools and makes it possible to compare them in time and space. Apart from that, it is possible to track the success/failure of schools in obtaining funds from foreign research grants, other foreign grants and national research grants. Along with the data about their shares in this publication it is possible to acquire a picture of the spatial diffe-rentiation of the performance of higher education institutions in research. It is also possible to track their performance in education where it is the result of several parameters such as the number of students, number of graduates, qualification structure of teachers, economic intensity of study fields, assertion of graduates in practice and the like. The period after 2009, that is, after accession of the SR to the Eurozone and introduction of euro, is the subject of investigation.

As far as the share in the performance of public higher education institutions is concerned, Bratislava (42.3%) clearly dominates. This dominance is even more evident in the field of research measured by proportion in the successful acquisition of foreign and national research grants and proportions in publication activity (Tab. 9). In terms of NUTS 2 regions Eastern Slovakia ranks second. Central Slovakia and Western Slovakia follow. On the level of NUTS 3 regions the administrative region of Bratislava is followed by those of Košice (18%) and Nitra (10.6%). The lowest proportion corresponds to ARs Trenčín (1.8 %) and Prešov (4.3%). What's interesting is the comparison of proportions in performance in education and performance in research (publication activity). More important proportions in research than in education are in ARs Bratislava and Košice and the rest of regions are characterised by a higher proportion in the area of education compared to research. The location of higher education institutions and higher education research in Slovakia provides a different picture. Research in the difference in education is more concentrated in two traditional centres (Bratislava and Košice). It is evident from their shares in published outputs (64.3%), international research grants (76%) and national research grants (69.7%) in the studied period. In education the sum of their proportions in performance is lower (57.2%). It seems that neoliberalization contributed only to some deconcentration of higher education. In the case of research no such deconcentration has been noticed. It rather relates to much higher economic costs and demands on the staff of the new research capacities.

Analysis of performance funding also facilitates the tracking of dynamics of performance of higher education institutions in regions and centres of their activities. The values of the increase index of the performance part of the subsidy in 2017 compared to 2009 (2009 = 100%) show that the region of Eastern Slovakia reached the greatest increase of performance (129.4%), which exceeded the national level of increase (125%). The increase in the remaining NUTS 2 regions was below the national level. In the case of NUTS 3 regions, the administrative region of Trnava recorded the highest increase (141.6%). On the contrary, AR Trenčín

[9] In 2017, for example, common subsidies to public higher education institutions amount to €446,800,359, including the performance component of €379,517,980. In total, in 2009 – 2017, the amount of €3,693,881,870 was allocated to public higher education institutions in the frame of common subsidies where the performance component was €2,955,391,051.

was the only that recorded a decreased performance (73.3%) – Tab. 9. Considering the centres, Komárno had the highest increase (152.6%), followed by Trnava[10] (141.6%) and Žilina (141.3%). The performance increase of Košice[11] and Prešov was also above the national level. A deep decrease of performance was observed in Trenčín (73.3%) and Ružomberok (89.6%). An increase of performance in Bratislava was similar to the national level (124.6%)[12] – Tab. 10.

Tab. 9. Selected indicators of performance of public higher education institutions in Slovakia by NUTS 2 and 3 regions

NUTS 2/3	PERFOR (%)	I 2017/2009 (%)	FOGRE (%)	OFGR (%)	NAGR (%)	PUBLIC (%)	EDUC (%)
B	42.34	124.6	49.67	34.79	50.42	44.76	39.35
W	17.27	123.1	7.41	24.60	9.23	16.02	19.41
C	18.13	122.4	15.92	23.84	18.18	15.24	18.72
E	22.26	129.4	27.00	16.77	22.17	23.99	22.52
BA	42.34	124.6	49.67	34.79	50.42	44.76	39.35
TT	4.86	141.6	3.35	1.74	2.70	4.56	5.46
NR	10.65	126.0	3.50	21.34	6.03	9.98	11.75
TN	1.76	73.3	0.56	1.52	0.50	1.48	2.20
ZA	9.70	124.2	12.97	14.73	11.35	7.29	9.98
BB	8.43	120.3	2.95	9.12	6.83	7.95	8.74
PO	4.26	129.3	0.67	4.29	2.88	4.36	4.67
KE	18.00	129.5	26.33	12.48	19.29	19.62	17.85

NUTS 2 regions: B – Bratislava, W – western Slovakia, C – central Slovakia, E – eastern Slovakia. NUTS 3 regions: BA – AR Bratislava, TT – AR Trnava NR – AR Nitra, TN – AR Trenčín, ZA – AR Žilina, BB – AR Banská Bystrica, PO – AR Prešov, KE – AR Košice, PERFOR – Proportion of performance component of subsidy from the state budget in 2009 – 2017, I – growth index of subsidy for performance in 2017/2009, FOGRE – proportion of funds obtained from foreign research grants in 2009-2015, OFGR – proportion of funds obtained from other foreign grants in 2009 – 2015, NAGRE – proportion of funds obtained from national research grants in 2009 – 2015, PUBLI – proportion of publication outputs for calculation of research subsidy in 2009-2016, EDUC – proportion of performance in education for calculation of wage subsidy in 2009 – 2017.
Source: own calculation from specifications of subsidies from the state budget to public higher education institutions available at: *http://www.minedu.sk/677-sk/financovanie/*

[10] Thanks to the University of St Cyril and Methodius which had the highest performance increase in the period in question (175.3%).

[11] Owing above all to the Pavol Jozef Šafárik University in Košice with the third highest increase of performance (148.2%) preceded by UCM Trnava and Selye János University in Komárno.

[12] Performance increase of the Comenius University was the highest (136.9%) among Bratislava's higher education institutions while that of the University of Economics was the lowest (102.4%).

Tab. 10. Selected performance indicators of public higher education institutions in Slovakia by their centres

CENTRE	PERFOR (%)	I 2017/2009 (%)	FOGRE (%)	OFGR (%)	NAGRE (%)	PUBLI (%)	EUDUC (%)
B. Bystrica	5.70	122.20	2.19	7.59	2.50	5.09	6.06
Bratislava	42.34	124.60	49.67	34.79	50.42	44.76	39.35
Komárno	0.71	152.60	0.02	3.99	0.16	0.71	0.86
Košice	18.00	129.50	26.33	12.48	19.29	19.55	17.85
Nitra	9.94	124.20	3.48	17.35	5.87	9.27	10.89
Prešov	4.26	129.30	0.67	4.29	2.88	4.36	4.67
Ružomberok	2.78	89.60	2.92	5.36	0.89	3.35	3.04
Trenčín	1.76	73.30	0.56	1.52	0.50	1.48	2.20
Trnava	4.86	141.60	3.35	1.74	2.70	4.56	5.46
Zvolen	2.74	116.40	0.77	1.53	4.33	2.86	2.67
Žilina	6.92	141.30	1.05	9.37	10.46	3.94	6.94

PERFORMANCE – Proportion of performance component of subsidy from the state budget in 2009 – 2017. I – growth index of subsidy for performance 2017/2009, FOGRE – share of funds obtained from international research grants in 2009 – 2015, OFGR – share of funds obtained from other foreign grants in 2009 – 2015, NAGRE – share of funds obtained from national research grants in 2009 – 2015, PUBLIC – share of published outputs for calculation of research subsidy (07712) in 2009-2017, EDUC – share of performance in education for calculation of wage subsidy for 2009 – 2017

Source: Proper calculations from specifications of subsidies from the state budget to public higher education institutions (MŠVVŠ SR 2017b).

CONCLUSION

Analysis confirmed that the progressive adaptation of the Slovak higher education system to neoliberal principles has led the individual higher education institutions to make an effort to increase performance and efficiency. In the first stage it manifested in the massification of higher education, because subsidies from the state budget reflecting on the performance of education (in case of public higher education institutions) and school fees (in the case of private and partially also public higher education institutions) became an important source of funds. The pressure on efficiency soon revealed a disparity between the abrupt increase in the number of students and a rather slow increase in the number of teachers. Economic factors spurred the higher education institutions to expand their capacities first of all in the economically undemanding fields. These were the fields that did not require the operation of expensive infrastructure and allowed mass education. From the point of view of the spatial distribution of higher education institutions nine new centres of higher education or faculties emerged on the map of Slovakia: 7 in the region of Western Slovakia and 2 in Central Slovakia. No new centre was established in the region of Eastern Slovakia. As a result, the location of centres of higher education institutions is irregular in favour of the Western part of the country. This irregularity is to some extent compensated by the network of detached sites (Fig. 1).

The gradual correction of the funding methodology applied to public higher education institutions was accompanied by an increasing importance of research at the cost of education. It led higher education institutions to an effort to increase the performance parameters in research. The focus of attention in public higher education institutions progressively shifted from performance in education to performance and quality of research. However, their successfulness varies, as obvious from the different pace of growth or even decreased performance in the last years (Tab. 10). After the initial phase of extensive development of the network of higher education institutions, faculties and their detached sites followed the phase of consolidation of the network owing to the demographic stagnation or decrease, increasing competition of foreign higher education institutions and pressure on quality and the performance of research. The majority of detached sites and several faculties have disappeared and one higher education institution has closed. If the effects of the mentioned external factors continue, further consolidating and differentiating processes can be expected.

This paper was supported by the Cultural&Educational Grant Agency of the Slovak Republic under the contract No. KEGA 046PU-4/2015 (Diverzifikácia a posilnenie interdisciplinárneho a aplikačného charakteru geografickej edukácie – vydanie učebnice: Destinačný marketing pre geografov). It was supported also by the Slovak Research&Development Agency under the contract No. APVV-15-0306 (Kooperatívne aktivity miestnych samospráv a meranie ich účinnosti a efektívnosti), as well as the the European Regional Development Fund (ERDF) – INTERREG V-A PL-SK 2014 – 2020, under the contract No. PLSK.03.01.00-SK-0083/16 (Moderné vzdelávanie bez hraníc otvára vidiek podnikaniu).

REFERENCES

ALTBACH, Ph., REISBERG, L., YUDKEVICH, M., ANDROUSHCHAK, G., PACHECO, I., eds. (2012). *Paying the professoriate. A global comparison of compensation and contracts.* London (Routledge).

ARUM, R., ROKSA, J. (2014). *Aspiring adults adrift. Tentative transitions of college graduates*. Chicago (University of Chicago Press).

BARBER, M., DONNELLY, K., RIZVI, S. (2013). *An avalanche is coming. Higher education and the revolution ahead*. London (Institute of Public Policy Research).

BOCZKOWSKI, A. (2010). Proces boloński jako ideologia edukacyjna strategii lizbońskiej. In Buchner-Jeziorska, A., Dziedziczak-Foltyn, A., eds. *Proces boloński – ideologia i praktyka edukacyjna*. Łódź (Wydawnictwo Uniwersytetu Łódzkiego), pp. 33-62.

CVTI (2016). *Štatistická ročenka – vysoké školy*, [Online]. Available: na: http://www.cvtisr.sk/cvti-sr-vedecka-kniznica/informacie-o-skolstve/statistiky/statisticka-rocenka-publikacia/statisticka-rocenka-vysoke-skoly.html?page_id=9596 [accessed 17 December 2016].

CVTI (2017). *Časové rady*, [Online]. Available: http://www.cvtisr.sk/cvti-sr-vedecka-kniznica/informacie-o-skolstve/statistiky/casove-rady.html?page_id=9724 [accessed 17 January 2017].

DEVÍNSKY, F. (2016). *Systémy financovania vysokých škôl v niektorých krajinách sveta s ohľadom na Slovensko. Bratislava* (Centrum vedecko-technických informácií), [Online]. Available: https://vysokoskolacidopraxe.cvtisr.sk/files/devinsky_financovanie-vysokych-skol.pdf [accessed 02 April 2017].

DOBBINS, M. (2011). *Higher education policies in Central and Eastern Europe: convergence towards a common model?* New York (Springer).

ETZKOWITZ, H., LEYDESDORFF, L. (1996). *Universities and the global knowledge economy: a triplex of university-government relations*. London (Pinter).

GÁL, Z., PTÁČEK, P. (2011). The role of mid-range universities in knowledge transfer in non-metropolitan regions in Central Eastern Europe. *European Planning Studies*, 19, 1669-1690.
GURŇÁK, D., KRIŽAN, F., LAUKO, V. (2009). Lokalizácia vysokých škôl na území Slovenska v časovo-priestorových súvislostiach. In Ručinská, S., ed. *Úloha univerzít v regionálnom rozvoji*. Košice (Univerzita P. J. Šafárika), pp. 64-83.
GURŇÁK, D., KRIŽAN, F., LAUKO, V. (2010). Vybrané aspekty siete vysokých škôl a regiónov ich dochádzky v Slovenskej republike. *Geographia Cassoviensis*, 4, 57-61.
GURŇÁK, D., LAUKO, V., KRIŽAN, F. (2011). Aktuálne tendencie vývoja dochádzkových regiónov verejných vysokých škôl na Slovensku. *Acta Geographica Universitatis Comenianae,* 55, 39-66.
GURŇÁK, D., KRIŽAN, F., LAUKO, V. (2012). Vybrané problémy slovenských vysokých škôl v kontexte uplatnenia absolventov na trhu práce. In Klímová, V., Žítek, V., eds. *XV. mezinárodní kolokvium o regionálních vědách, Valtice 20.-22. jún 2012.* Brno (Masarykova univerzita), pp. 455-465.
HANOVÁ, M., MORAVČÍKOVÁ, D., REHÁK, Š., VOZÁR, L. (2016). *Posilnenie úlohy vysokých škôl v regiónoch*. Bratislava (Ministerstvo školstva, vedy, výskumu a športu SR).
HARRISON, J., SMITH, D., KINTON, CH. (2016). New institutional geographies of higher education: the rise of transregional university alliances. *Environment and Planning, A*, 48, 910-936.
HEJWOSZ, D. (2010). *Edukacja uniwersytetska i kreowanie elit społecznych*. Kraków (Impuls).
CHOTAŠ, J., PRÁZNÝ, A., HEJDUK, T., eds. (2015). *Moderní univerzita. Ideál a realita.* Praha (Filosofia).
JÖNS, H, HOYLER, M. (2013). Global geographies of higher education: the perspective of world university rankings. *Geoforum*, 46, 45-59.
KAŠČÁK, O., PUPALA, B. (2011). Governmentality – neoliberalism – education: the risk perspective. *Journal of Pedagogy*, 2, 145-158.
KAŠČÁK, O., PUPALA, B. (2012). *Škola zlatých golierov. Vzdelávanie v ére neoliberalizmu*. Praha (Slon).
KEANNE, J., ALLISON, J. (2000). The intersection of the learning region and local and regional economic development: analysing the role of higher education. *Regional Studies*, 33, 896-902.
KOSOVÁ, B., PORUBSKÝ, Š. (2011). *Transformačné premeny slovenského školstva po roku 1989*. Banská Bystrica (Pedagogická fakulta Univerzity M. Bela).
KWIEK, M. (2004). The emergent European educational policies under scrutiny: the Bologna process from a Central European perspective. *European Educational Research Journal*, 3, 759-776.
KWIEK, M. (2014). Structural changes in the Polish higher education system (1990 – 2010): a synthetic view. *European Journal of Higher Education*, 4, 266-280.
LÁSZLÓ, B. (2008). The impact of the Bologna process on higher education in Slovakia. *European Education*, 40(2), 46-65.
LAUKO, V., GURŇÁK, D., KRIŽAN, F., TOLMÁČI, L. (2011). *Školstvo na Slovensku v kontexte regionálnych disparít*. Prešov (Vydavateľstvo Michala Vaška).
LAUKO, V., GURŇÁK, D., KRIŽAN, F. (2013). Prešovská univerzita – postavenie a priestorová pôsobnosť v rámci verejných vysokých škôl Slovenska. *Folia Geographica*, 22, 69-79.
LIESSMANN, K. P. (2009). *Teorie nevzdělanosti. Omyly společnosti vědění*. Praha (Academia).
MATLOVIČ, R. (2014). Koncept spoločensky relevantnej univerzity – východisko zo súčasnej krízy identity univerzity? In Kónya, P., ed. *Univerzita v kontexte zmien*. Prešov (Vydavateľstvo Prešovskej univerzity), pp. 11-29.

MEDERLY, P. (2009). *Systém financovania verejných vysokých škôl a jeho zmeny po roku 2006*. Bratislava (ARRA), [Online]. Available: http://www.arra.sk/sites/arra.sk/files/peter_mederly_2009_system_financovania_vvs_a_jeho_zmeny_od_roku_2006.pdf [accessed 02 April 2017].

MELOSIK, Z. (2009). *Uniwersytet i społeczeństwo*. Kraków (Impuls).

MEUSBURGER, P. (2017). Geography of education and educational systems. In *The International Encyclopedia of Geography*, 1-18, [Online]. Available: http://onlinelibrary.wiley.com/doi/10.1002/9781118786352.wbieg0687/abstract [accessed 02 April 2017].

MEUSBURGER, P., LIVINGSTONE, D., JÖNS, H., eds. (2010). *Geographies of science*. Dordrecht (Springer).

MŠMT ČR (2017). *Výkonové ukazovatele. Vysoké školy*, [Online]. Available: http://dsia.uiv.cz/vystupy/vu_vs.html [accessed 19 January 2017].

MŠVVŠ SR (2017a). *Výročné správy o stave vysokého školstva*, [Online]. Available: https://www.minedu.sk/vyrocne-spravy-o-stave-vysokeho-skolstva/. [cit: 18-01-2017].

MŠVVŠ SR (2017b). *Financovanie*, [Online]. Available: https://www.minedu.sk/677-sk/financovanie/ [accessed 18 January 2017].

NESTOROVÁ-DICKÁ, J. (2013). Vysoké školstvo v krajinách Vyšehrádskej štvorky v čase postsocialistickej transformácie. *Acta Geographica Universitatis Comenianae*, 57, 195-211.

PORTAL VŠ (2017). *Akreditované študijné programy*, [Online]. Available: https://www.portalvs.sk/sk/morho. [accessed 22 January 2017].

POWELL, R. C., (2007). Geographies of science: histories, localities, practices, futures. *Progress in Human Geography*, 31, 3, 309-329.

RAUHVARGERS, A. (2011). *Global university rankings and their impact*. Brussels (European University Association).

REHÁK, Š., DŽUPKA, P., SEKELSKÝ, T., ŠEBOVÁ, M. (2015). *Lokálne ekonomické vplyvy univerzít*. Bratislava (Ekonóm).

RUČINSKÁ, S., VÝROSTOVÁ, E., MITAĽOVÁ, J. (2007). Univerzita v konkurenčnom prostredí. *Verejná správa a spoločnosť*, 8, 98-115.

RUTTEN, R., BOEKEMA, F., KUIJPERS, E., eds. (2003). Economic geography of higher education. In *Knowledge infrastructure and learning regions*. London (Routledge), pp. 1-16.

SHAPIN, S. (1998). Placing the view from nowhere: historical and sociological problems in the location of science. *Transactions of the Institute of British Geographers*, 23, 5-12.

SIMÕES, A., CARNEIRO, A., DIOGO, M. P. (2003). *Travels of learning: a geography of science in Europe*. Dordrecht (Kluwer Academic Publishers).

SIMONS, M., MASSCHELEIN, J. (2009). Towards the idea of a World University. *Interchange*, 40(1), 1-23.

SLAUGHTER, S., LESLIE, L. L. (1997). *Academic capitalism: politics, policies, and the entrepreneurial university*. Baltimore (John Hopkins University Press).

SLAVÍK, V., LIŠKOVÁ, Ľ. (1996). Centrá vysokých škôl v SR. *Geografické informácie*, 4, 64-70.

SLAVÍK, V., PLAVČAN, P. (1999). Rozvoj vysokého školstva v Slovenskej republike v uplynulom desaťročí. *Pedagogická revue*, 51, 439-447.

ŠIMA, K., PABIAN, P. (2013). *Ztracený Humboldtův ráj. Ideologie jednoty výzkumu a výuky ve vysokém školství*. Praha (Slon).

WARF, B., ARIAS, S. (2009). Introduction: the reinsertion of space in the humanities and social sciences. In Warf, B., Arias, S., eds. *Spatial turn: interdisciplinary perspectives*. London (Routledge), pp. 1-10.

WOLANIUK, A. (2010). *Uniwersytety i ich rola w organizacji przestrzeni*. Łódź (Wydawnictwo Uniwersytetu Łódzkiego).

GEOGRAFICKÝ ČASOPIS / GEOGRAPHICAL JOURNAL 69 (2017) 4, 313-337

René Matlovič, Kvetoslava Matlovičová

NEOLIBERALIZÁCIA VYSOKÉHO ŠKOLSTVA NA SLOVENSKU V GEOGRAFICKEJ PERSPEKTÍVE

Cieľom štúdie bolo stručne prediskutovať konceptuálny rámec neoliberalizácie vysokého školstva, poukázať na zmeny právnych predpisov sprevádzajúce postupnú adopciu neoliberálnych princípov do fungovania vysokých škôl na Slovensku, poukázať na zdroje dát o vysokom školstve a analyzovať vybrané parametre systému vysokých škôl na Slovensku a ich dynamiku po roku 1989. Konkrétna analýza sa orientovala na vývoj inštitucionálnej štruktúry (vysoké školy, fakulty a detašované pracoviská), vývoj počtu študentov a vysokoškolských učiteľov a ich priestorovú distribúciu, financovanie a výkony verejných vysokých škôl vo vzdelávaní a výskume. Uvedené parametre boli sledované v rozličných časových intervaloch po roku 1989. Geografické hľadisko sa uplatnilo pri štúdiu priestorovej distribúcie sledovaných parametrov podľa regiónov NUTS2, NUTS3, centier vysokých škôl a v niektorých prípadoch aj centier fakúlt.

Analýza potvrdila, že postupná adaptácia slovenského systému vysokého školstva na neoliberálne princípy viedla jednotlivé vysoké školy k snahám o zvyšovanie výkonov a efektívnosti. V prvej fáze sa to prejavilo masifikáciou vysokoškolského vzdelávania, pretože významným zdrojom príjmov pre vysoké školy sa stali dotácie zo štátneho rozpočtu odrážajúce výkon vo vzdelávaní (v prípade verejných vysokých škôl), školné a poplatky spojené so štúdiom (v prípade súkromných a čiastočne i verejných vysokých škôl). Tlak na efektivitu sa odrazil v diskrepancii medzi razantným nárastom počtu študentov a len veľmi pozvoľným nárastom počtu vysokoškolských pedagógov. Ekonomické faktory stimulovali vysoké školy rozširovať ich kapacity najmä v odboroch s nízkou ekonomickou náročnosťou. Išlo o odbory nevyžadujúce si zaobstaranie a prevádzkovanie drahej infraštruktúry a umožňujúce masové vzdelávanie. Významným faktorom bol aj dopyt po zvyšovaní kvalifikácie osôb pôsobiacich vo verejnej službe a zdravotníctve. Z hľadiska priestorovej distribúcie vysokých škôl pribudlo na mape Slovenska deväť nových centier vysokých škôl alebo fakúlt. V regióne západného Slovenska vzniklo sedem a v regióne stredného Slovenska dve nové centrá. Ani jedno však nepribudlo na východnom Slovensku. V dôsledku toho je rozmiestnenie centier vysokých škôl a fakúlt nerovnomerné v prospech západnej polovice územia. Táto nerovnomernosť je do istej miery kompenzovaná sieťou detašovaných pracovísk (obr.1).

S postupným korigovaním metodiky financovania verejných vysokých škôl sa zvyšovala váha výskumu na úkor vzdelávania, čo viedlo vysoké školy k snahám o nárast výkonových parametrov vo výskume. Na verejných vysokých školách sa pomaly ťažisko pozornosti presunulo z výkonov vo vzdelávaní na výkony a kvalitu výskumu. Ukázalo sa, že ich úspešnosť je diferencovaná, čo sa prejavuje rozdielnym tempom rastu a dokonca aj prípadmi poklesu výkonov v ostatných rokoch (tab. 10). Po počiatočnej fáze extenzívneho rozvoja siete vysokých škôl, fakúlt a ich detašovaných pracovísk nastala v súvislosti s demografickým poklesom, rastúcou konkurenciou zahraničných vysokých škôl a tlakom na preukazovanie kvality a výkonu vo výskume fáza počiatku konsolidácie siete vysokých škôl. Zanikla väčšina detašovaných pracovísk, niekoľko fakúlt a zrušená bola aj jedna vysoká škola. Za predpokladu zachovania týchto externých faktorov je možné očakávať pokračovanie konsolidačných procesov v budúcom období.