



NATIONAL AGENCY
for HIGHER EDUCATION
QUALITY ASSURANCE
(UKRAINE)

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PART 1

QUANTITATIVE INDICATORS OF THE DEVELOPMENT OF THE HIGHER EDUCATION SYSTEM IN UKRAINE

1.1. Number of Higher Education Institutions

Since the beginning of the last decade of the twentieth century, Ukraine and other post-Soviet states have witnessed not unexpected processes of “massification” and “popularisation” of higher education. While the developed countries of Western Europe and the United States passed a similar stage of development of university education with different success and at different rates in the middle or second half of the twentieth century, Ukraine, alongside other Eastern European countries, was forced to “experience” these processes more recently. Unfortunately, it was impossible just to apply the previous experiences and ready-made “patterns” of European systems to Ukraine’s realities because of certain specificities of individual countries (established values and practices, historical tradition, economic indicators etc.). However, developing a strategic vision of what quality higher education in Ukraine should be, and accordingly, establishing a path to this ambitious goal are tasks within the power of today’s post-Maidan and pro-European society.

It should be noted that, according to many foreign experts²² (the experiences of Great Britain, Italy, Germany, Canada, and strange as it might seem Georgia, are the most valuable and most applicable to the current situation of the National Agency for Higher Education Quality Assurance), total and irreversible “massification” of higher education is always inversely dependent on the quality of higher education, results in a decrease in state funding for universities, and consequently, an increase in tuition fees for applicants to higher education. These are the consequences of the uncontrolled increase in the number of universities during the 1990s and 2000s which the entire system of higher education in Ukraine is facing today.

On the other hand, despite some fundamental similarities, every system of higher education has characteristic national features, and therefore there is no universal way to solve problems that arise. In Ukraine, a significant decrease in higher education quality took place was accompanied by a rise in corruption, significant economic, political and geopolitical crises, the beginning of war for independence with the Russian Federation. However, here we need to make a small historical digression and return to the fact of increasing numbers higher education institutions accompanied by a demographic decline in the number of applicants for higher education - which of course had an impact on quality.

Thus, in 1990-1991 in Ukraine, according to publicly available data of the State Statistics Committee of Ukraine, there were only 149 higher education institutions

(universities, academies, institutes), which enrolled 881,300 students. This number of higher education institutions and applicants for higher education were inherited by Ukraine at the beginning of its independence from the Soviet system of higher education which ceased to exist.

Exactly ten years later, in 2000-2001, there were already twice as many higher education institutions — 315 universities, academies and institutes. There were also almost one and a half million students (1,402,900). Until 2010, the number of higher education institutions was constantly growing primarily due to an increase in the number of private institutions and to the expansion of the network of branches of both state and public institutions. The number was growing, despite a significant reduction in the number of school graduates and a general decline of the country's economy; at a time when the country was not able to finance such network of higher education institutions sufficiently.

Another systemic problem was the impossibility of increasing the number of highly qualified teaching staff in the 2000s in accordance with the growing number of higher education institutions. Mass migration of school teachers to universities became widespread because higher education institutions lacked staff to conduct practical and laboratory classes, and sometimes even lectures. This wave marked the beginning of another important process — the “massification” of postgraduate education and a rapid increase in the number of defended theses, which were frankly speaking of low scientific quality – a fact that also impacted the overall state of higher education in Ukraine. As a result after 2010, people started talking about reducing or merging universities, institutes, and academies to a level that our society actually required, and most importantly, our economy could support. However, no real steps have yet been taken in this regard – for many reasons, including a lack of understanding of the mechanisms for closing or merging higher education institutions.

The analysis of the higher education system and its transformation processes in the context of Ukraine's entry into the European Higher Education Space as of 2013-2014 was presented in the detailed research entitled “Monitoring the Integration of the Ukrainian Higher Education System into the European Higher Education and Research Space”²⁴. The statistical information presented in that report covered a very wide range of representative material on 325 higher education institutions (229 of which are state and municipal and 96 private) which enrolled more than 2 million students.

The 2014-2015 academic year showed a significant decline in the number of universities, academies, and institutes. Such processes were undoubtedly caused by the annexation of the Crimean Peninsula and Russia's armed aggression in Eastern Ukraine. In subsequent years, the figure showed slight fluctuations. As of 2018, we can speak of 282 institutions of higher education with approximately 1.3 million students enrolled²⁵. Note that our data on the number of higher education institutions in 2018-2019 is based on the latest information available on the website of the State Statistics Committee of Ukraine as of December 2019.

Data on the number of higher education institutions as of 2018-2019 are shown graphically in Figure 1 which demonstrates the presence of 149 universities, institutes, and academies in Ukraine in 1991, a peak number of 353 institutions in 2009, and a

gradual downward movement in subsequent years. Note that the rapid decline in the number of higher education institutions in 2015 is due to the armed aggression of the Russian Federation and the temporary loss of part of Ukraine's territory.

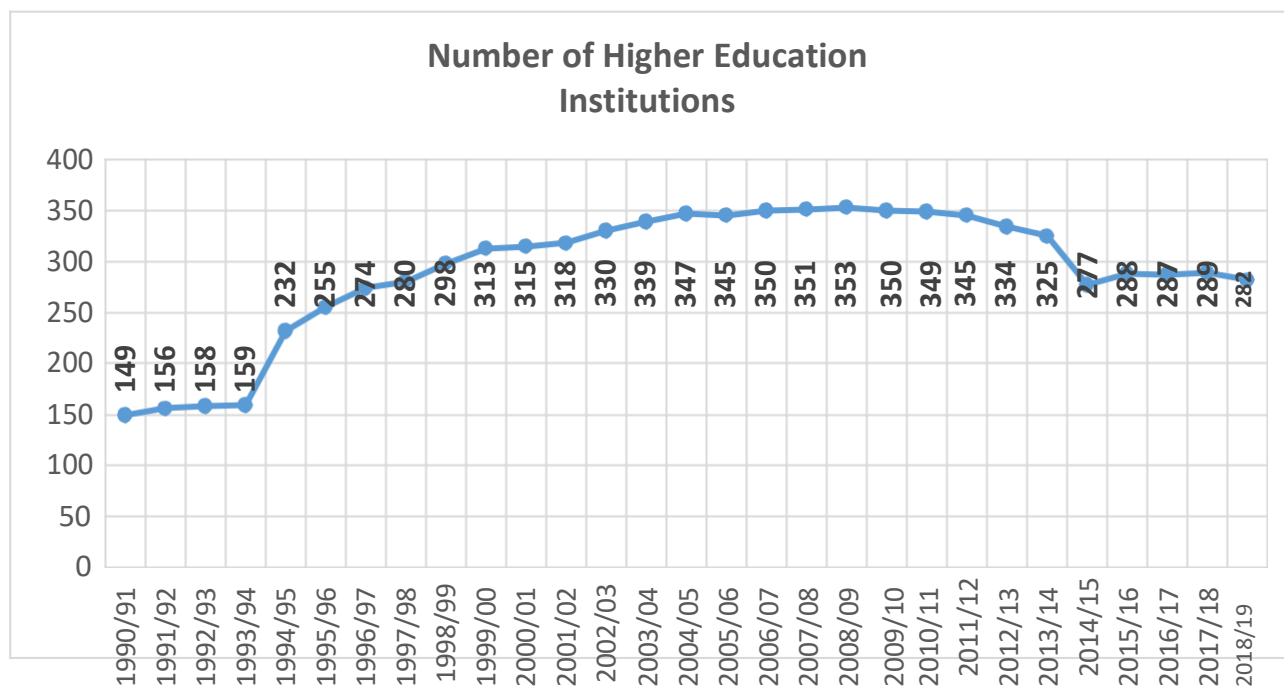


Fig. 1

The rapid increase in the number of higher education institutions in the 90s was mainly due to favourable conditions for the emergence of private higher education institutions and a significant number of branches of large and small universities. As already noted, this “university boom” caused another interesting phenomenon in Ukrainian society – teachers of secondary schools, technical schools, colleges etc. were invited to teach in universities. The existing research and teaching staff of universities were insufficient to provide adequate education to an increasing number of students, so a wave of “new”, not always experienced teachers tried to fill the gap in the educational – but not research – process. It is quite clear that quality of education was not a high priority under such conditions.

Despite the fact that today the number of higher education institutions is at the level of 1998, trends in the quality of filling universities not only with applicants, but also with research and teaching staff are similar.

Concerns about such processes expressed by society and officials of different ranks was the reason for the appearance in 2008 of the decision of the Supervisory Board of the Ministry of Education and Science of Ukraine entitled “Normalising the Performance of Separate Structural Subdivisions (Branches) of Higher Education Institutions” (Protocol No. 1/3-6 of 01.02.2008)²⁶. However, like most documents of that time, this decision was mainly declarative in nature and did not lead to significant changes in the quantitative and, most importantly, qualitative measures of the performance of higher education institutions.

Real steps by the Ministry of Education and Science aimed at optimising the number of universities became visible only at the beginning of 2015 when, after a

regular meeting of the Accreditation Commission of Ukraine, a clear discrepancy between the license requirements and educational performance of universities and their numerous branches was revealed²⁷. Based on the results of the discussion, the Commission asked the Ministry of Education and Science to take control of the process of closing about 60 institutions of higher education. Part of them was indeed closed.

In 2019, the strategy of the Ministry of Education and Science has been somehow transformed: now the Ministry is not talking about closing, but about merging universities, encouraging them to do so by increasing funding. The new funding system should become a tool for “uniting universities. The larger the institution of higher education, the more money it will have”²⁸. This approach seems to be quite appropriate, designed particularly to improve the quality of higher education.

As a result, as of November 2019, the reference guide of higher education institutions on the website www.osvita.ua contained information about 476 higher education institutions in Ukraine, of which 319 are state-funded²⁹ and 157 are private.

This information is obviously not accurate: the reference guide of higher education institutions contains not current and sometimes obsolete information, listing universities and their branches as separate institutions. However, this reference guide actually demonstrates general trends in the development of higher education in the late twentieth and early twenty-first centuries (e.g. the emergence of private universities, the tendency to establishment of numerous branch campuses, and a high total number of higher education institutions in Ukraine in comparison with the EU, the triple predominance of state institutions over private ones etc.), and provides useful statistical information.

We consider that the fullest and most current information about the number of higher education institutions and their branches is available in the register of subjects of educational activities in the Unified State Education Database (Ukr. ЄДЕБО). According to this database there are 761 higher education institutions in Ukraine in general as of November 2019. This huge figure (compared to the figures of EU countries) includes 193 universities, 152 institutes, 127 separate branches and 8 research centres.

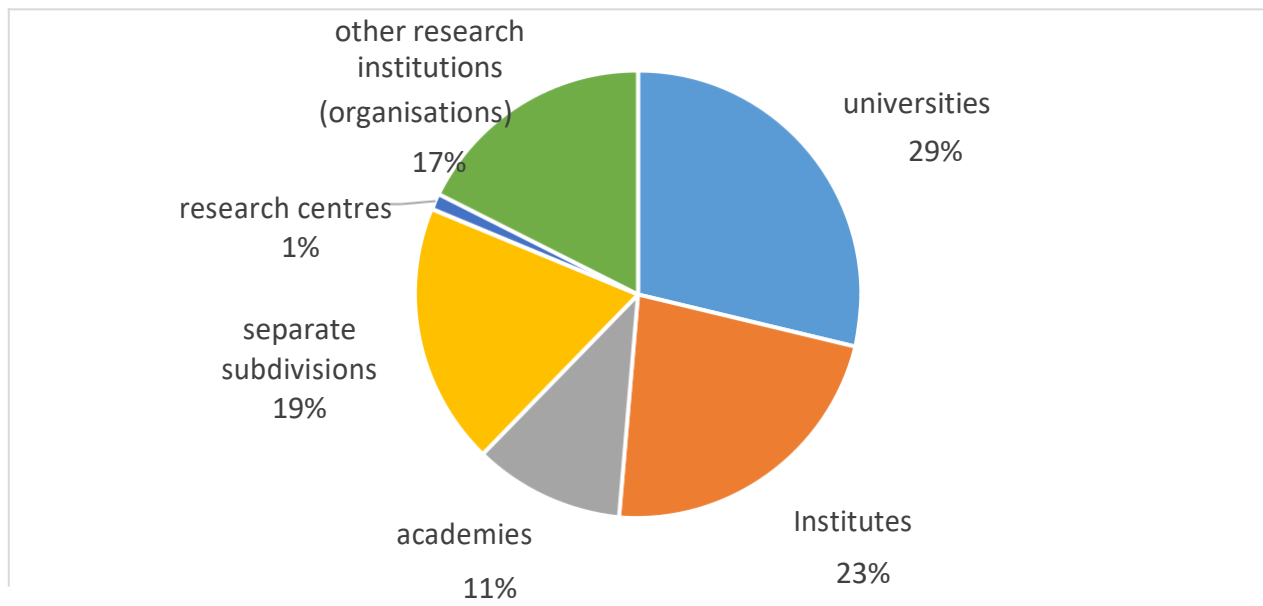


Fig. 2

When comparing higher education institutions by their level of accreditation, we observe another interesting trend: during the 1990-1991 academic year, the ratio of educational institutions of the I-II levels of accreditation and educational institutions of the III-IV levels of accreditation was 4.97 (742 technical schools, colleges to 149 universities, academies, institutes), during the 2000-2001 academic year the ratio was 2.1 (664 to 315), in the 2018-2019 academic year –1.3 (370 to 282)³¹, which once again confirms the obvious transformation of post-secondary educational institutions from specialized vocational schools towards higher education (see Fig. 3).

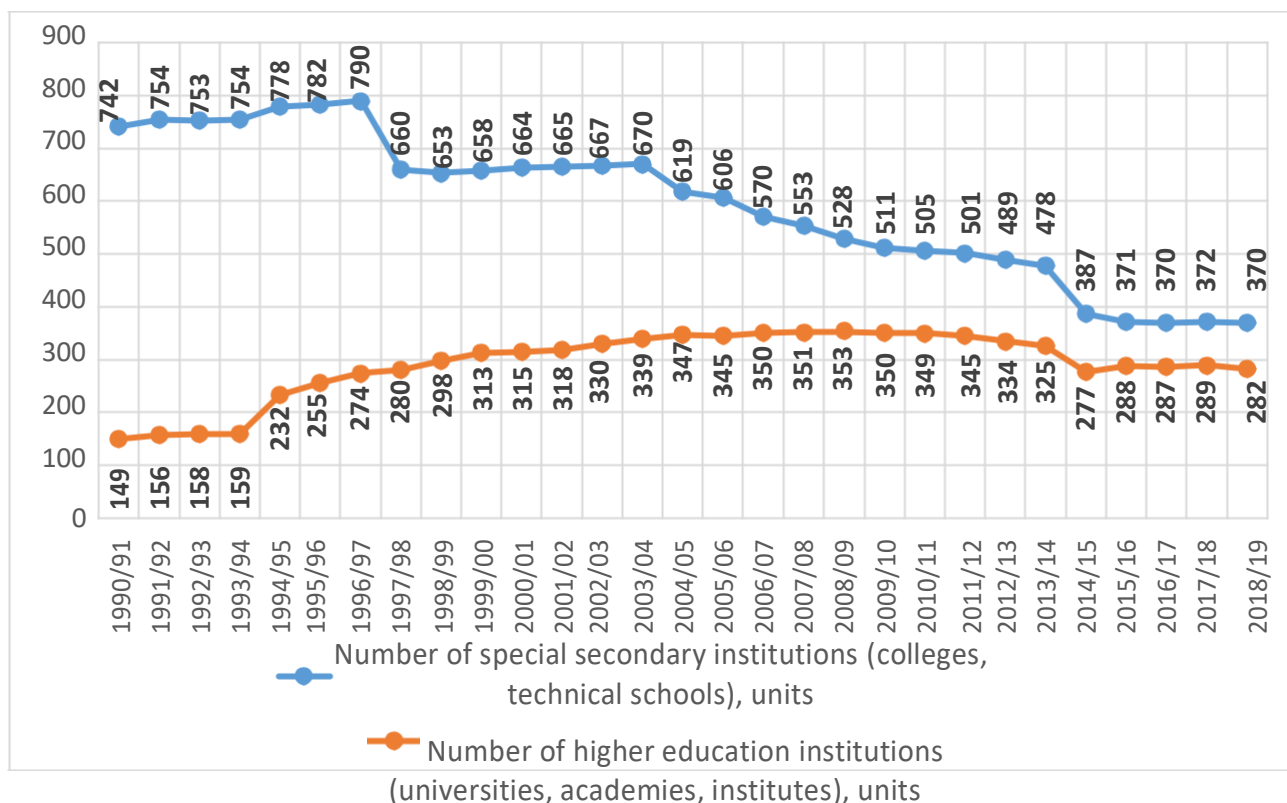


Fig. 3

As for ordinary schools, we observe the opposite processes, but these are also closely related to changes in the network of higher education institutions. The network of schools began to shrink after 1995. However, it should be kept in mind that the effectiveness of education in the state does not depend on the number of schools. In Europe, there are 15 to 17 students per teacher, while in Ukraine this figure is 8.9. Therefore, in primary, secondary and higher school, it is necessary to improve the quality of teaching, “including the development of new forms of education, such as distance learning”³². We believe that distance learning will become a serious competitor to full-time education in the coming years and will help universities that develop it to survive in modern market conditions.

To complete this section, we offer another interesting observation. As of November 2019 671 higher education institutions were registered in Ukraine where a population is approximately 42 million³³. These figures allow us to affirm that there are about 16 higher education institutions per 1 million people in our country. Is this a lot or a little? In Georgia, the number of universities per 1 million people is 15; in Poland, it is 12; in the Netherlands, Germany, France, and the United Kingdom, where the process of ensuring the quality of higher education has a long and successful tradition, the number of higher education institutions per one million of the population is approximately the same and ranges from 4 to 6.

1.2. Distribution by Form of Ownership, Region, Type

In the context of the analysis of quantitative indicators of higher education in Ukraine, the classification of higher education institutions according to the type of ownership is interesting. The classification shows some differences between the domestic system and its European and Anglo-Saxon counterparts. In Ukraine, the largest number of higher education institutions are state-owned: their number is 456 (381 if we exclude branches). Private institutions – their number is 191 (140), and the number of municipal institutions is 24 (23)³⁴.

The figures in parentheses clearly show how many institutions within the higher education system are represented by branches, and allows us to see the ratio of universities to their branches, taking into consideration the type of ownership (Fig. 4):

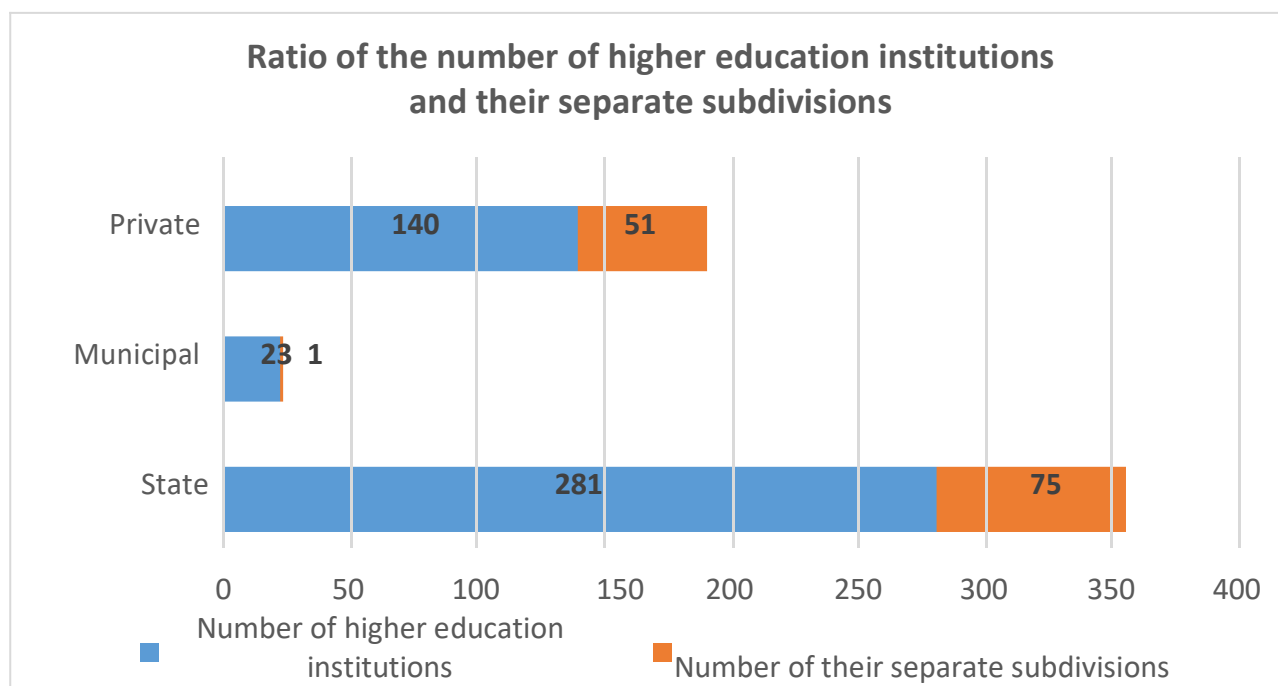


Fig. 4

Thus, for private universities, the ratio between universities and their branches is 0.36; for public universities, it is 0.27; for municipal universities, it is minimal and is rapidly heading to zero (0.04).

From Fig. 5, we see that private institutions have a more extensive network of branches in comparison with state ones, which reflects their character as primarily business structures that strive to constantly expand and increase their profitability. We do not state that such tendencies are inherently bad – a majority of foreign higher education institutions function according to the same strategies. However, the quality of higher education that these institutions provide, and their personnel potential are very often second or third rate (with certain exceptions).

As to the distribution of higher education institutions by region, it is quite traditional and expected. The largest number of universities, academies and institutes are located in the capital of Ukraine (181) and the major economically developed regions of the country: Kharkiv (60), Dnipropetrovsk (49), Lviv (48), Odesa (33)

regions. Significantly, the number of higher education institutions in these four major regional centres combined is less than the number of universities in the capital.

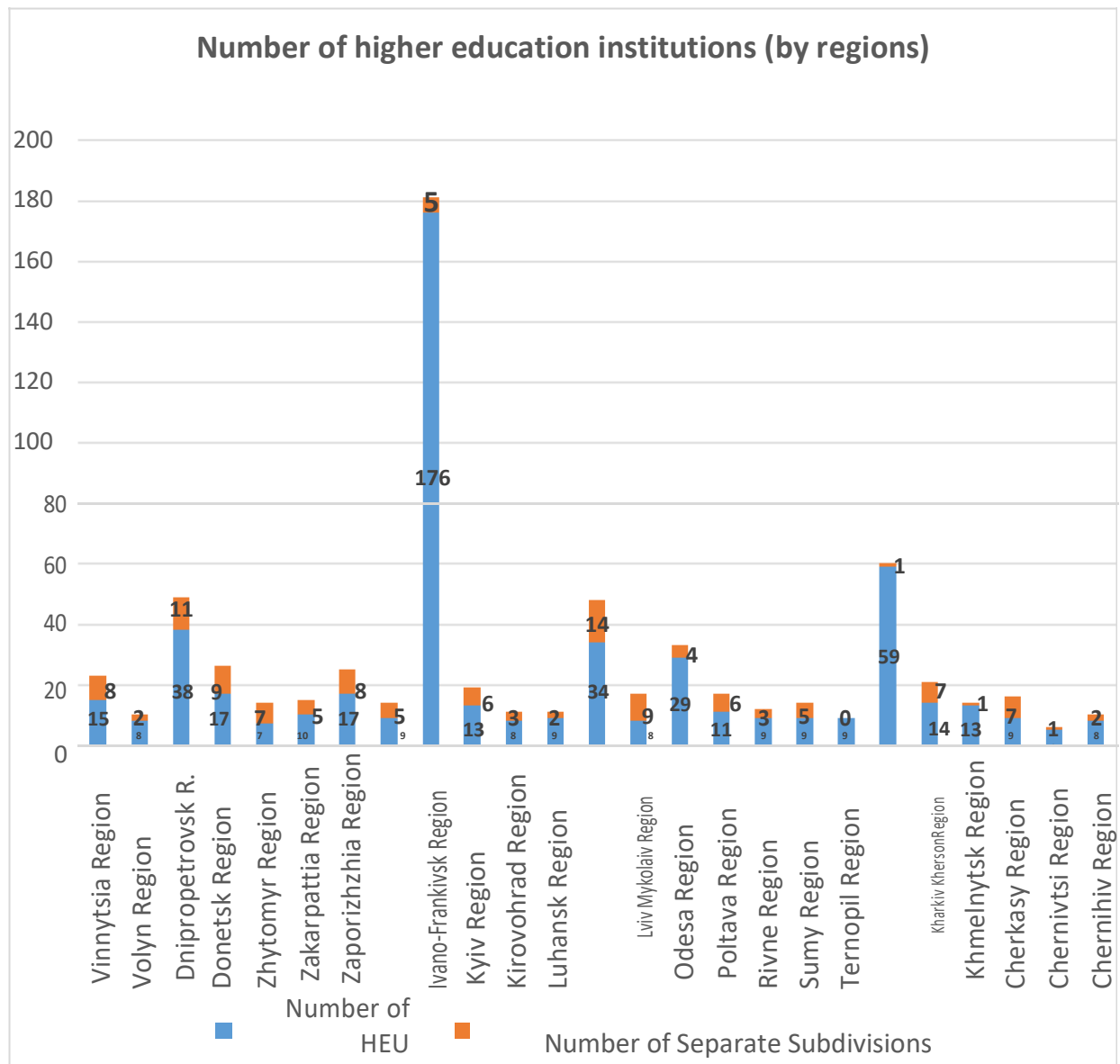


Fig. 5

We observe a slightly different situation with branch offices of higher education institutions. The largest number of separate structural subdivisions are in Lviv (14), Dnipropetrovsk (11), Donetsk (9) and Mykolaiv (9) regions. Another significant point: in Zhytomyr, Mykolaiv, and Cherkasy regions, the ratio of the number of higher education institutions to the number of branches is almost 1:1; in Vinnytsia, Donetsk, Zakarpattia, Ivano-Frankivsk, Kyiv, Poltava, Sumy, Kherson, this figure is 2:1.

Let us hope that the situation with the performance of the branches of higher education institutions and the generally low quality of higher education that they offer will improve now that the Law “On Amendments to Some Legislative Acts of Ukraine Concerning Refinements of Educational Activities in the Field of Higher Education”³⁵ has been passed. This Law regulates the activities of branches: it bans the establishment and functioning of territorially separate structural subdivisions of higher education institutions in Kyiv, Kharkiv, Lviv, Dnipro and Odesa.

1.3. National Higher Education Institutions (Quantity, Distribution by Region and Type)

The situation with higher education institutions that have the “National” status is indicative³⁶ of the overall quality of the higher education system since these universities are traditionally considered to be leaders among institutions in the humanities³⁷.

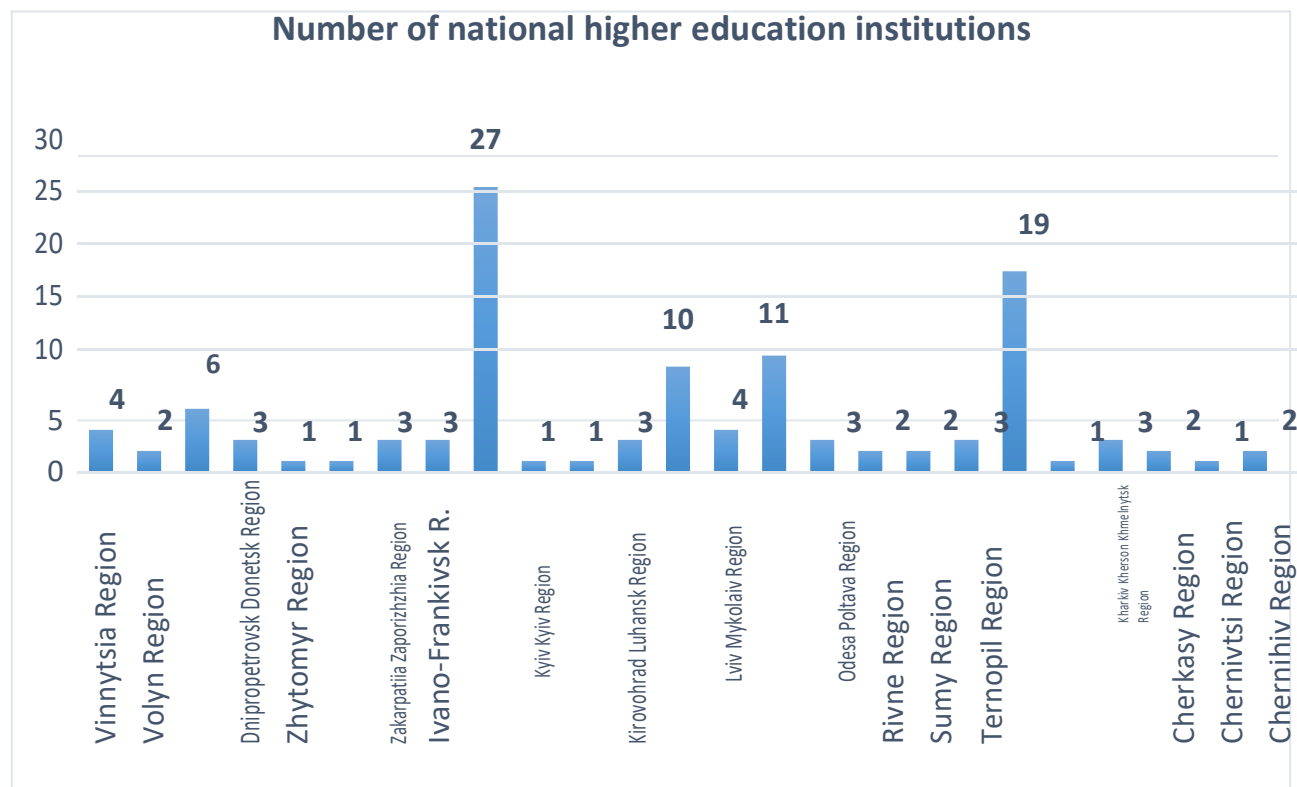


Fig. 6

The regional distribution of “national” universities is shown in Fig. 6. Here we see an obvious quantitative advantage for national universities in Kyiv (city), Kharkiv, Odesa, Lviv and Dnipropetrovsk regions – one that reflects the situation with all higher education institutions in the country. The number of “national” institutions is quite high for Vinnytsia region, taking into account the relatively small number of higher education institutions (only 15) in the region.

Among all national universities (total - 118), we distinguish the following groups of higher education institutions: 24 classical, 17 technical, 11 subordinate to military and security forces, 10 agrarian, 10 artistic, 9 medical, 8 transport, 6 economic, 6 pedagogical, 3 architectural, and 14 other universities that are grouped into an “other” category (Fig. 7).

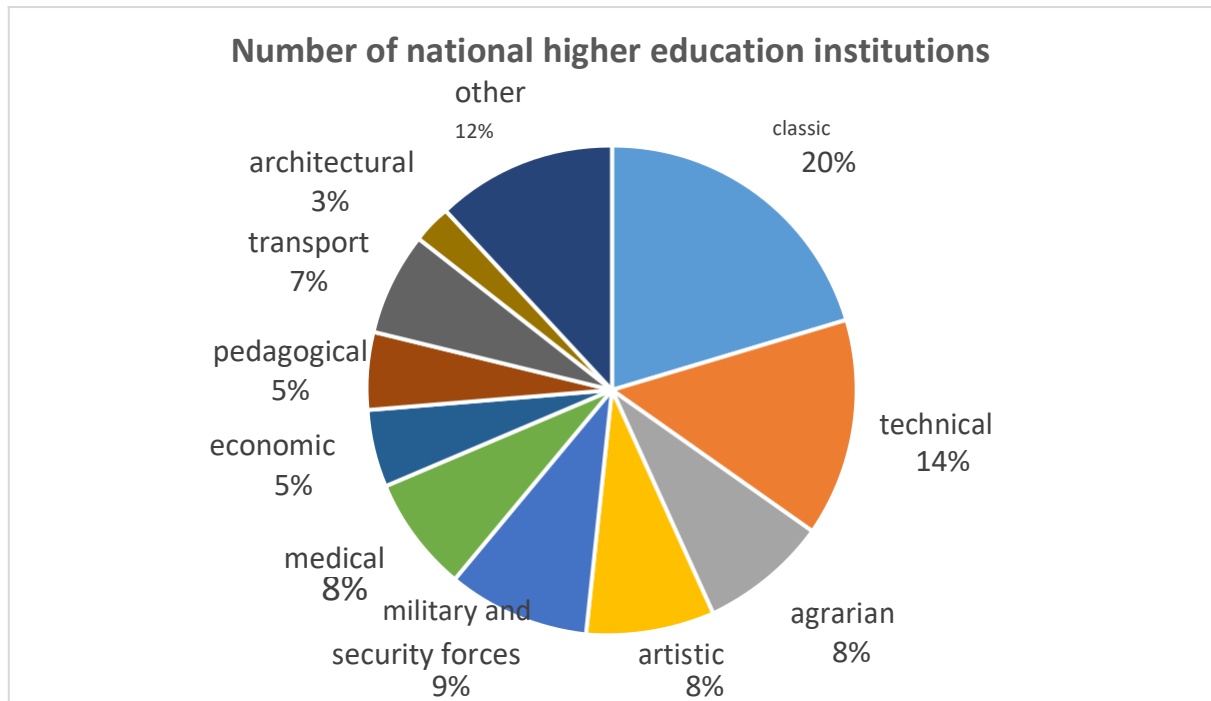


Fig. 7

We consider it strange that in a country that declares innovative development to be its goal, the number of economic universities with “national” status is 5% of the total number of institutions, and the number of agrarian and artistic universities is 8 %. These figures are somewhat strange and require change. In this context, it is natural that according to the Bloomberg Innovation Index in 2019⁵⁸, Ukraine ranks 53rd among the 60 studied countries. This low position clearly demonstrates the contribution of our state to the development of innovative technologies.

Let us note that in October 2019, the National Agency for Higher Education Quality Assurance presented an analytical report on the implementation of criteria for granting and confirming the “national” status to a higher education institution in Ukraine. Based on the annual reports provided by these “national” institutions, an integral indicator of the implementation of comparative criteria for each of them was calculated.

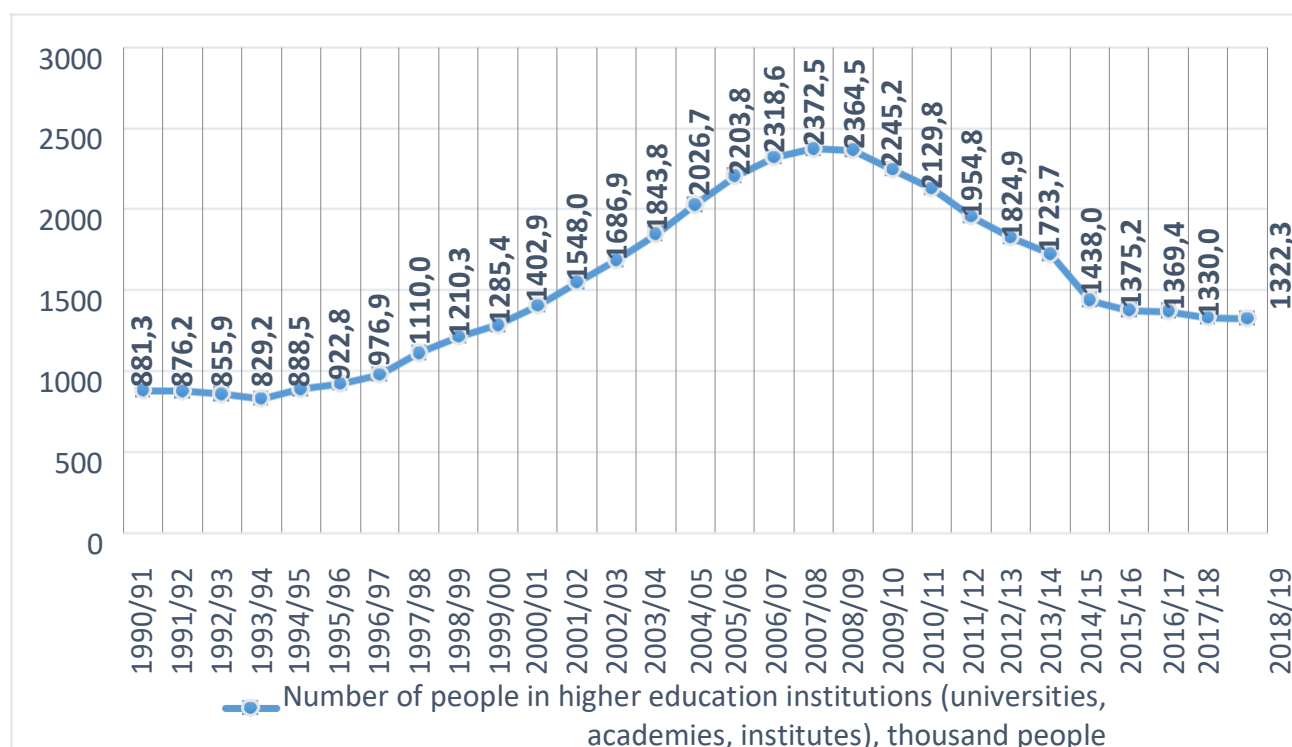
The results of the vast majority of national higher education institutions were within two standard deviations from the average. Only one institution, Vinnytsia National Agrarian University, had a value of the integral indicator significantly below the average. Four higher education institutions that were displaced from the temporarily occupied territories (Donbas National Academy of Civil Engineering and Architecture; Donetsk National University of Economics and Trade Named After Mykhailo Tuhon-Baranovskyi; Donetsk National Medical University; Luhansk National Agrarian University) had low indicators, but they were within the normal range. The

same group includes agrarian and technical universities (Bila Tserkva National Agrarian University; Zhytomyr National Agroecological University; Lutsk National Technical University), as well as the Hetman Petro Sahaidachnyi National Ground Forces Academy, the National Academy of Internal Affairs, National Law University named after Yaroslav the Wise, and Poltava V. G. Korolenko National Pedagogical University. Conversely, there were institutions that demonstrated high overall indicators: Taras Shevchenko National University of Kyiv, National University of Bioresources and Natural Resource Use of Ukraine, V. N. Karazin Kharkiv National University, six artistic higher education institutions (Lviv National Academy of Arts, Lviv National Musical Academy named after Mykola Lysenko; National Academy of Visual Arts; Petro Tchaikovsky National Music Academy of Ukraine; Odessa National Music Academy named after A. V. Nezhdanova; Kharkiv National Kotlyarevsky University of Arts), one agrarian (Mykolaiv National Agrarian University) and one medical university (Lviv National Medical University named after Danylo Halytskyi), as well as one institution located in a district centre (Kremenchuk Mykhailo Ostrohradskyi National University).

Most likely, the Analytical Report on the Implementation of Criteria for Granting and Confirming the Status of National Higher Education Institutions in Ukraine was the first and last document of the National Agency of this genre, since after the adoption of changes to the Law of Ukraine "On Higher Education" the "national" status of a higher education institution has become honorary and is granted ceremonially for significant contributions to the development of higher education, science and culture of Ukraine. However, the transition from intrinsic to honorary status assumes the annulment of the Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Procedure and Criteria for Granting a National Status to an Institution of Higher Education, Confirmation or Deprivation of This Status" No. 912 of 22 November 2017, according to which higher education institutions are obliged to report and promulgate annual performance reports. This has not yet been done.

1.4. Applicants for Higher Education

According to the State Statistics Committee of Ukraine⁴² there has been a gradual reduction in the number of students, PhD and DS (Doctor of Science) students in Ukraine since 2008. Thus, at the beginning of 1990-1991, 881,300 applicants for higher education studied in Ukrainian higher education institutions (universities, academies, institutes). This figure reached its peak in 2007-2008 (2,372,500 people), after which it began to gradually decrease (see Fig. 8).



The decrease in the number of applicants for higher education is quite natural; its reasons are the same factors as those that led to a decrease in the number of higher education institutions: demographics and economic crises, the annexation of Crimea and the military aggression of the Russian Federation in Eastern Ukraine. In the coming years, if we do not take into account the potential of foreign students, the decrease in the number of higher education institutions and the number of applicants for higher education will continue.

When speaking of the concentration of applicants for higher education by regions, the largest number of students study in Kyiv (343,000 people), then in Kharkiv (city) and Kharkiv region (154,800 people), the city of Lviv and Lviv region (108,000 people), Dnipro and Dnepropetrovsk region (92,000 people) (see Fig. 9).

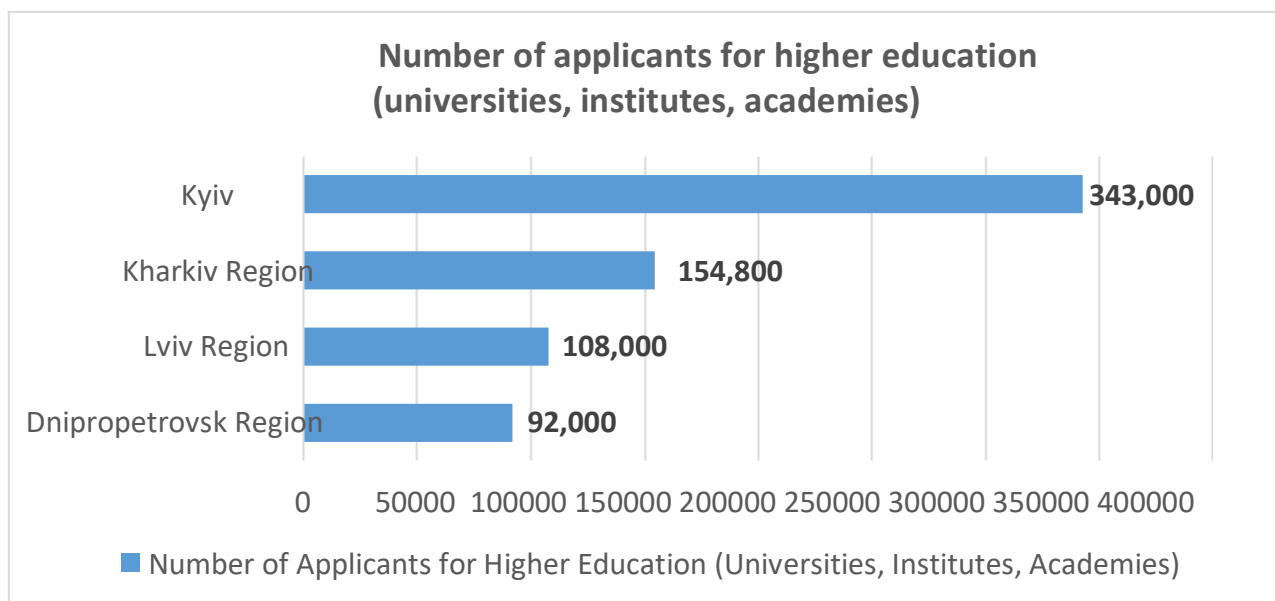


Fig. 9

Again, we draw attention to an obvious fact (analogous to the data on numbers of higher education institutions): almost the same number of people study in the capital of Ukraine as in the three specified regions and regional centres combined. In this situation, statistics on students that study in part-time degree programmes is alarming: in Kyiv, every third applicant for higher education studies in a part-time degree programme, which in our opinion, is reflective less on the quantity of the capital's higher education institutions, but rather their quality of higher education. Of course, the figure of more than 100 thousand part-time students in the capital will require separate special studies and interpretations in the future.

It is also indicative for the quality of higher education that there are more applicants for higher education in Ukraine enrolled in contract-based (tuition paying) form of education than in budget-based (state-funded): of 1.3 million applicants for higher education, 739 thousand are enrolled on a contract basis (56%) and 582 thousand applicants (44%) – state-funded (Fig. 10).

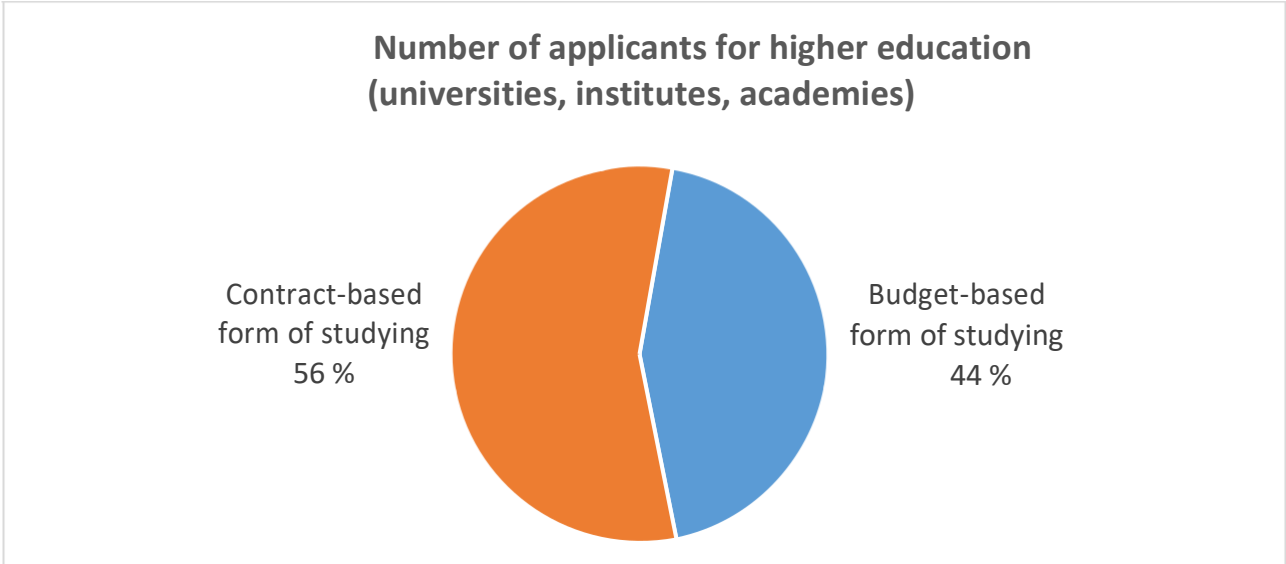


Fig. 10

Most likely, the reform of the system of financing of higher education which started in January 2020⁴⁴, will lead to an increase in the number of tuition-paying students. The new system removes the traditional dependence of university funding on the number of students, while introducing an indicative cost of studying (the cost of studying for contract students will correspond to the level at which the state finances the studies of a public student).

Another statistical reference: among 1.3 million students of universities, academies and institutes, almost 400 thousand (31 %) study part-time, 2200 (0.2%) receive evening-time education.

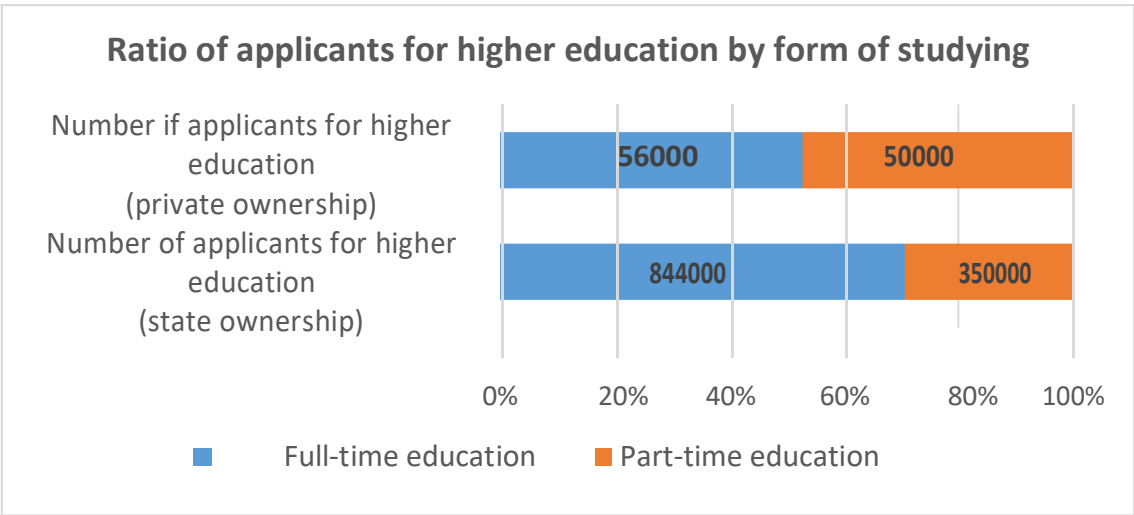


Fig. 11

At the same time, we observe an interesting pattern: in private higher education institutions, the percentage of part-time students is significantly larger and reaches the mark of almost 50% which also raises serious questions about the quality of higher education for part-time students in private higher education institutions (Fig. 11).

If we speak of state-funding of higher education, according to the Ministry of Finance of Ukraine⁴⁵ the studies of 345 thousand full-time students and 34 thousand part-time students are financed by the state (Fig. 12).

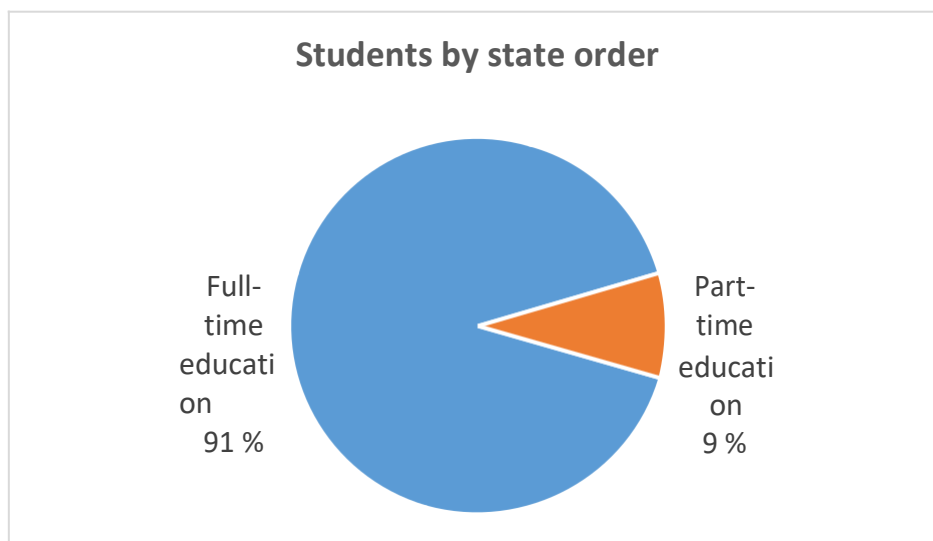


Fig. 12

According to publicly available data as of November 2019, in 2018, universities, academies, and institutes in Ukraine graduated almost 171 thousand students. Graduates of Ukraine's higher educational institutions were distributed in the following way (see Fig. 13):

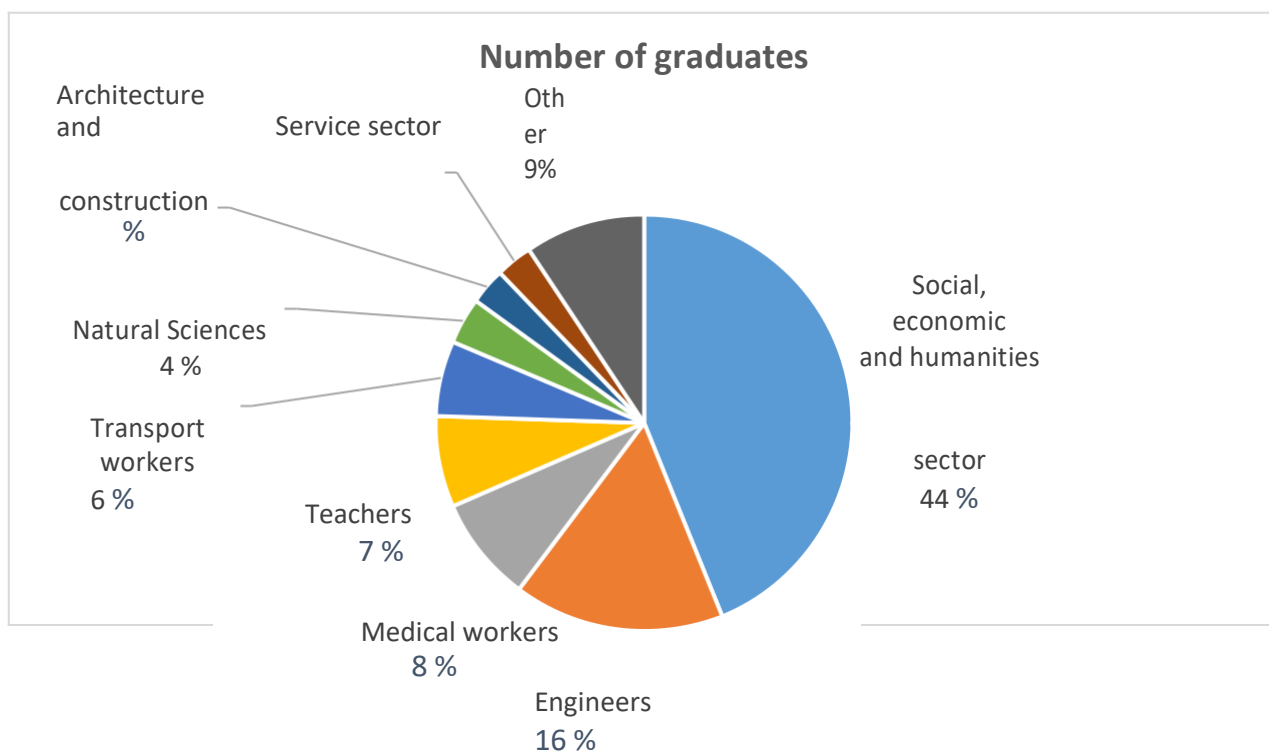


Fig. 13

There is an enormous quantitative advantage of students in the socio-economic and humanities fields – 75 thousand people. Next in descending order – 28 thousand engineers, 14 thousand doctors, 12 thousand teachers, 10 thousand transport workers, 6.2 thousand representatives of natural sciences, 4.8 thousand architects and builders, 4.8 thousand workers with higher education in the service sector, almost 16 thousand representatives of other major fields.

It is quite difficult to speak about the quality of training of graduates of higher education institutions, as Ukraine has not yet conducted and is not conducting systematic monitoring of employment. That is why it is impossible to say what percentage of young people found a job in general and in their field of study in particular. Separate statistics were released by Hanna Novosad, the Minister of Education and Science of Ukraine on 26 December 2019, during her presentation of the reform plan for higher education funding and management of universities⁴⁶. For example, in 2019 almost 50% of the officially registered unemployed were individuals with higher education. For comparison, the share of unemployed people with professional education was only 30 %.

Such disappointing figures once again indicate the urgent need to create a system for tracking the trajectory of movement and career paths of graduates of higher education institutions for an adequate analysis of the quality of higher education.

Over the past two decades, there have also been significant changes in the number of PhD and doctoral students (see Fig. 14). Yes, we can talk about a gradual increase in the number of post-graduate students since 1991, with a top point in 2010 (34,653 people), and subsequent decline and alignment after the approval of the course for European Integration in 2014-2015 (28,487 people); another decline associated with demographic factors and a significant complication of requirements for the defense of dissertations, the introduction of new PhD programmes in 2016 in accordance with the norms of the Law of Ukraine "On Higher Education" (24,786 people).

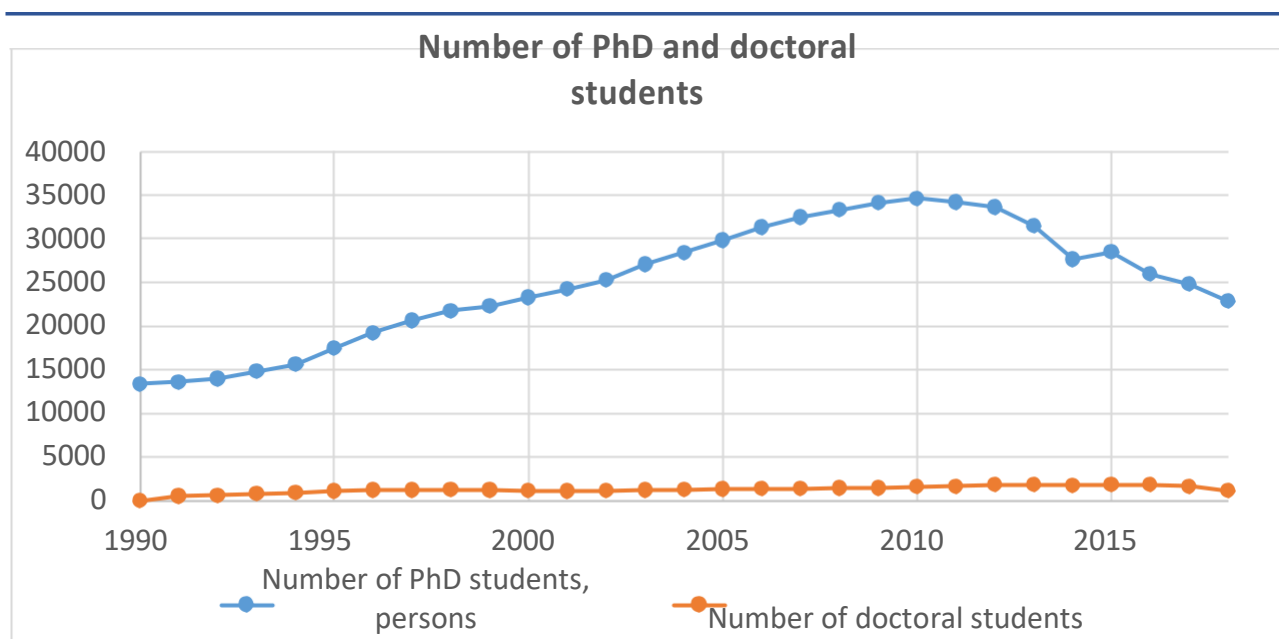


Fig. 14

It is interesting to analyze the indicators of the curve on the graph (see Fig. 14) specifically with respect to the number of students pursuing the Doctor of Sciences degree. Since 1995 (1105 people), the number of such people has been more or less stable, reaching its highest point in 2013 (1813 people), then showing a gradual decline, and in 2018 reaching the approximate level of 2002 (1145 people). However, the peak figure – 1,813 people – does not seem to reflect the quality of professional practice of heads of educational institutions at the time: under conditions of staff shortages to cover required teaching hours, few were able to maintain the balance between research and teaching required for quality doctoral studies. With the implementation of stricter requirements as to the quality of doctoral theses, and great attention paid by the Ministry and financial supervision authorities as to the formal qualifications of job seekers and employees, the number of students seeking the Doctor of Sciences degree began to decrease rapidly, and undoubtedly, the quality of defended research began to grow, corresponding to the real needs of the society.

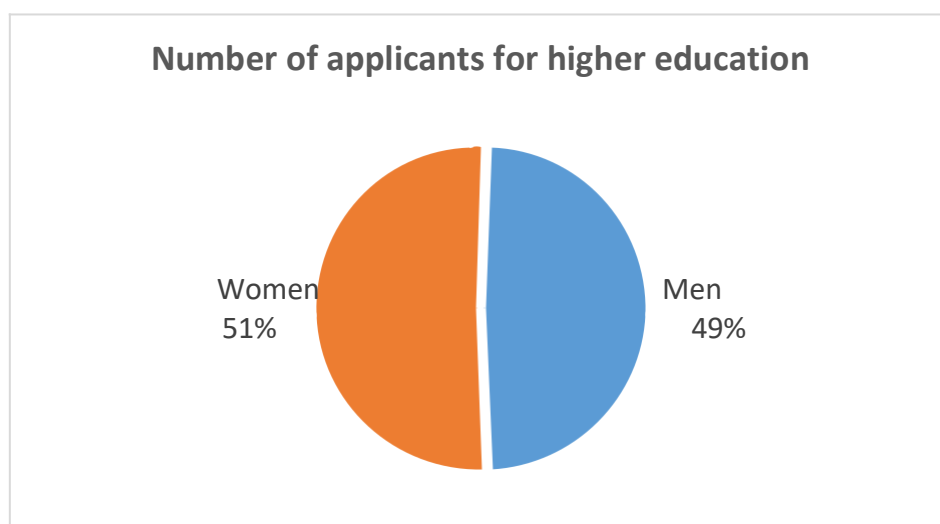


Fig. 15

As to the gender distribution of applicants for higher education, we observe a slight advantage of women over men (Fig. 15), although these indicators are significantly different depending on educational programs.

Data of the State Statistics Committee of Ukraine on the ratio of the number of women to the number of men (51% vs. 49 %) show the relative stability of this gender parity index over the past 10 years at the undergraduate and graduate levels. A slightly different situation is observed at the doctoral level, where this index decreased from 1.510 in 2014 to 1.099 in 2017 (see Fig. 16).

Gender parity index among pupils and students of educational institutions of Ukraine (ration of the number of women to the number of men)								
Levels of education								
according to the ISCED 2011		2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Name	code							
Bachelor equivalent	6	1,166	1,130	1,121	1,093	1,083	1,074	1,081
Master or Equivalent	7	1,396	1,385	1,366	1,290	1,296	1,278	1,243
Doctoral or Equivalent	8	1,478	1,498	1,481	1,510	1,469	1,145	1,099

Fig. 16

The question of how the gender parity index correlates with the general tendency of reduction in the number of post-graduate and doctoral students of both sexes, of course, requires a separate study.

Just for comparison, we observe a different gender picture among research and teaching staff. Thus, according to research that took place in 2015⁴⁷, from 1995 to 2012 Ukraine experienced a rapid feminisation of qualified higher education staff: the total number of Doctors of Science of both sexes increased by 60.0 %, and women among them – by 190.0 %. For PhD's these figures are 53.0 % and 137.0 %. The authors of this study concluded that despite the growth trend of presence of women among Doctors of Science, quantitative feminisation is due to an increase in the female contingent among PhD's because the highest predominance of women among Doctors of Philosophy is within the age of 31-40 years, and their overall quantitative predominance is maintained up to the age of 50 years.

In the context of the distribution of female higher education professionals by branch of science and research positions, the Humanities and Social Sciences are as expected, the most feminised⁴⁸ where female Doctors of Philosophy are more than 55% and Doctors of Science are more than 35 %. Graphically this data is shown in Figure 17.

Percentage of women among	Doctors of Philosophy	Doctors of Science
Humanities:	62,8	35,4
Art Criticism	81,3	58,8
Philology	74,4	45,0
Philosophy	44,4	12,5
Social Sciences:	58,1	40,5
Economics	54,5	36,3
Pedagogy (Education)	69,8	56,0
Sociology	62,3	50,0
Natural Sciences:	46,1	23,9
Physics and Maths	25,1	9,4
Chemistry	49,0	16,7
Medicine	66,1	42,3
Technical Sciences:	21,2	9,0
Transport	14,1	10,0
Construction and Architecture	29,7	11,6

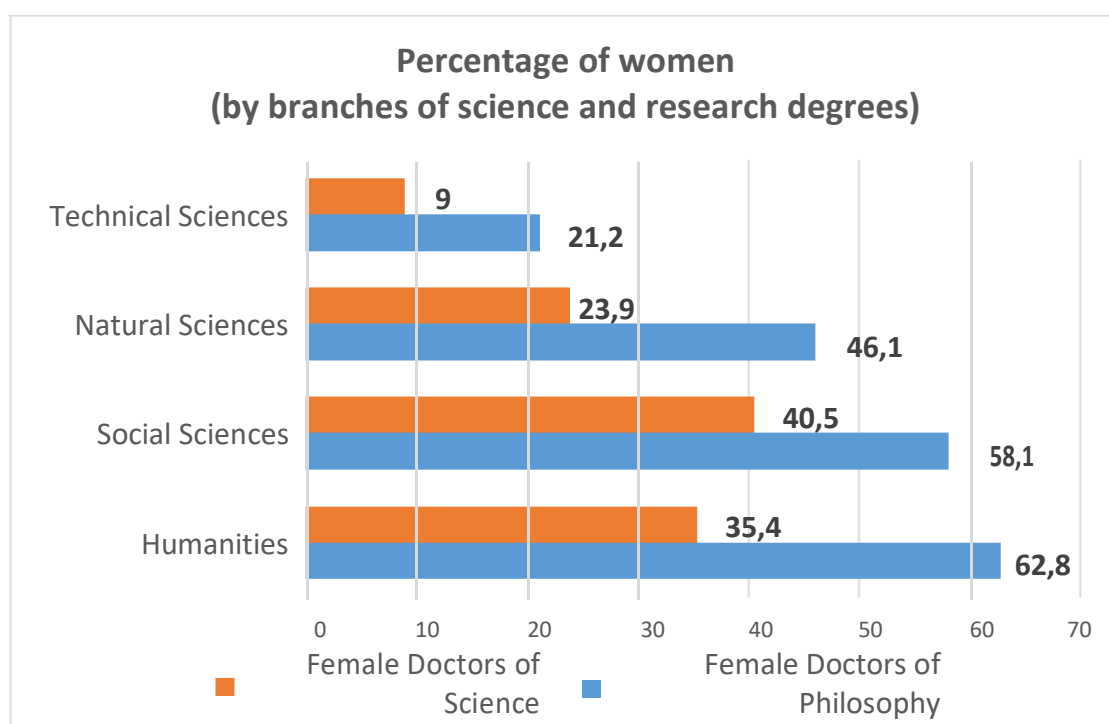


Fig. 17

As of November 2019, there is no information about the gender ratio of research and teaching staff to applicants for higher education in open sources, although we assume that the above trends towards the feminisation of higher education remain.

1.5. Academic Scholarships

In 2018, according to the State Statistics Committee of Ukraine, 260 thousand students of Ukrainian higher education institutions received scholarships (only 20 %), which is undoubtedly due to the implementation of the scholarship reform by the Ministry of Education and Science in 2017, according to which a rating of student performance was introduced with an emphasis on qualitative indicators of educational, research, and social activities. The main difference from the old system is that academic scholarships are now available not to all students who passed the exams at a grade of "good" and "excellent", but only to those who have high marks (up to 45 % of the total number of students) in the ranking of the higher education institutions. The minimum scholarship at universities today is 1300 UAH; the enhanced stipend is 1660 UAH.

Table 2 provides a comparison of scholarship payments and the peculiarities of their awards in different countries of the world⁴⁹.

Country	Scholarship payments in the country's currency	Peculiarities of awards and payments
<i>Ukraine</i>	Scholarship amounts are indicated from 830 UAH to 3225 UAH per month	Amount of scholarships in Ukraine in 2019 is determined by the ranking and level of accreditation of educational institutions
<i>USA</i>	From 1000 to 15,000 dollars	Studying in the USA is tuition-paying but many different grants are Provided
<i>Poland</i>	850 zlotys per month	In Poland, scholarships are awarded to those students that have high academic performance or are in a difficult financial situation
<i>Germany</i>	From 800 to 1000 euros per month	Studying is free and scholarships are awarded to the most prospective students
<i>Great Britain</i>	From 1000 to 6000 pounds Sterling	High-potential students and PhD students are provided with financial support
<i>Moldova</i>	From 490 to 1250 lei per Month	Social and enhanced scholarship is Awarded
<i>Sweden</i>	From 25 to 100 % of tuition Fees	Scholarships are awarded to those who require them

As we can see, the reform of 2017 referring to the provision of scholarships for higher education institutions is aimed at bringing Ukrainian universities closer to the standards of the European educational space, and to stimulate the improvement of the quality of the educational process.

1.6. Internationalisation of Higher Education

According to the Ukrainian State Center for International Education⁵⁰, in 2018, 66,310 foreign students studied in Ukraine. This helped to attract 331 million 550 thousand US dollars to the Ukrainian economy or more than 9.2 billion Ukrainian hryvnias⁵¹. It is a well-known fact that Ukrainian education attracts foreign citizens for its relatively high quality, prestige, and also low tuition fees, the cost of accommodation and food, and the same rights and freedoms for applicants for higher education from foreign countries and for citizens of Ukraine.

In 2018, the number of foreign students studying in Ukraine increased by 10 thousand and totalled more than 75 thousand. These students are mainly representatives of India, Azerbaijan, Morocco, Turkmenistan, Nigeria and Egypt⁵².

In 2019, 75,605 foreign students from 154 countries were studying in Ukraine. This figure is about 6 % of the total number of students in the higher education system. Of these, 66,131 people are in bachelor-level education or integrated-masters (medical) programmes, 7,270 people are engaged in language training, 1,480 are receiving postgraduate (master's) education, 29 students are in academic mobility programmes, and 695 are studying at the PhD or doctoral level (Fig. 18).

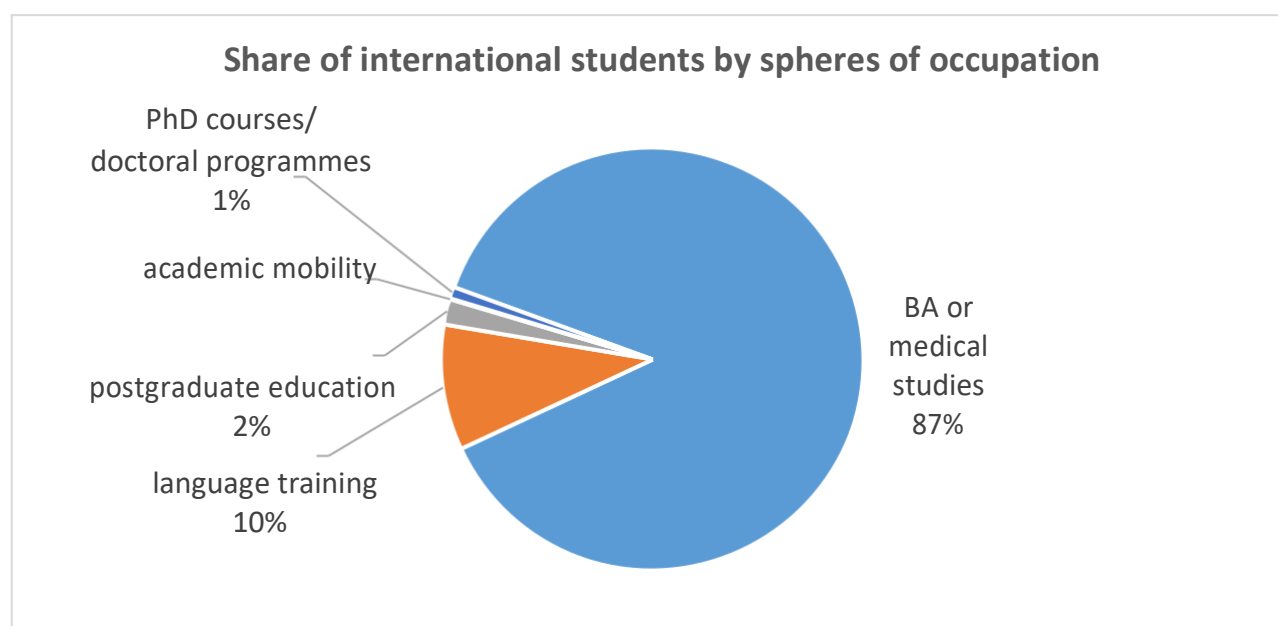


Fig. 18

It is a matter of concern that the proportion of foreigners studying Ukrainian is quite low – only 10%, which is, first of all due to the quality of educational materials and poor learning experiences and general socialization.

In November 2019, the National Agency for Higher Education Quality Assurance invited the heads of Ukraine's higher education institutions to fill in a questionnaire entitled "Internal Quality Assurance Systems in Domestic Higher Education Institutions"⁵³, one of the parts of which was a section on "Internationalisation". Thus,

according to the analysed data (a total of 183 responses were received) 51,493 foreign applicants for higher education were studying at 183 Ukrainian universities as of June 2019. Separate issues among others that interested the National Agency were the percentage of foreigners who were expelled by the higher education institutions for non-attendance and who left their studies at the higher education institution voluntarily. It is estimated that the percentage of foreigners expelled for failing to learn the educational material is 6 % (3,230 people); the percentage of foreign citizens who voluntarily left studying is 4 % (1,820 foreigners).

Another problem that needs to be mentioned when referring to the internationalisation of higher education in Ukraine is the huge disparity between the number of foreign students who are in Ukraine for academic mobility programmes (2 %) and the number of foreign students for whom the Ukrainian higher education institution has become a place of primary education (87%). Obviously, this ratio can be explained by the fact that the first group consists mainly of representatives of the European Union states, where academic mobility is extremely popular. The second group is mainly representatives of Asian and African countries, for whom academic mobility programs are not available. It is this contingent of foreign applicants who are actively entering Ukrainian educational institutions in search of a better and cheaper education or searching for a transit to get to an economically developed European country. Fig. 19 presents the Top 10 countries whose citizens have become graduates of higher education in Ukraine.

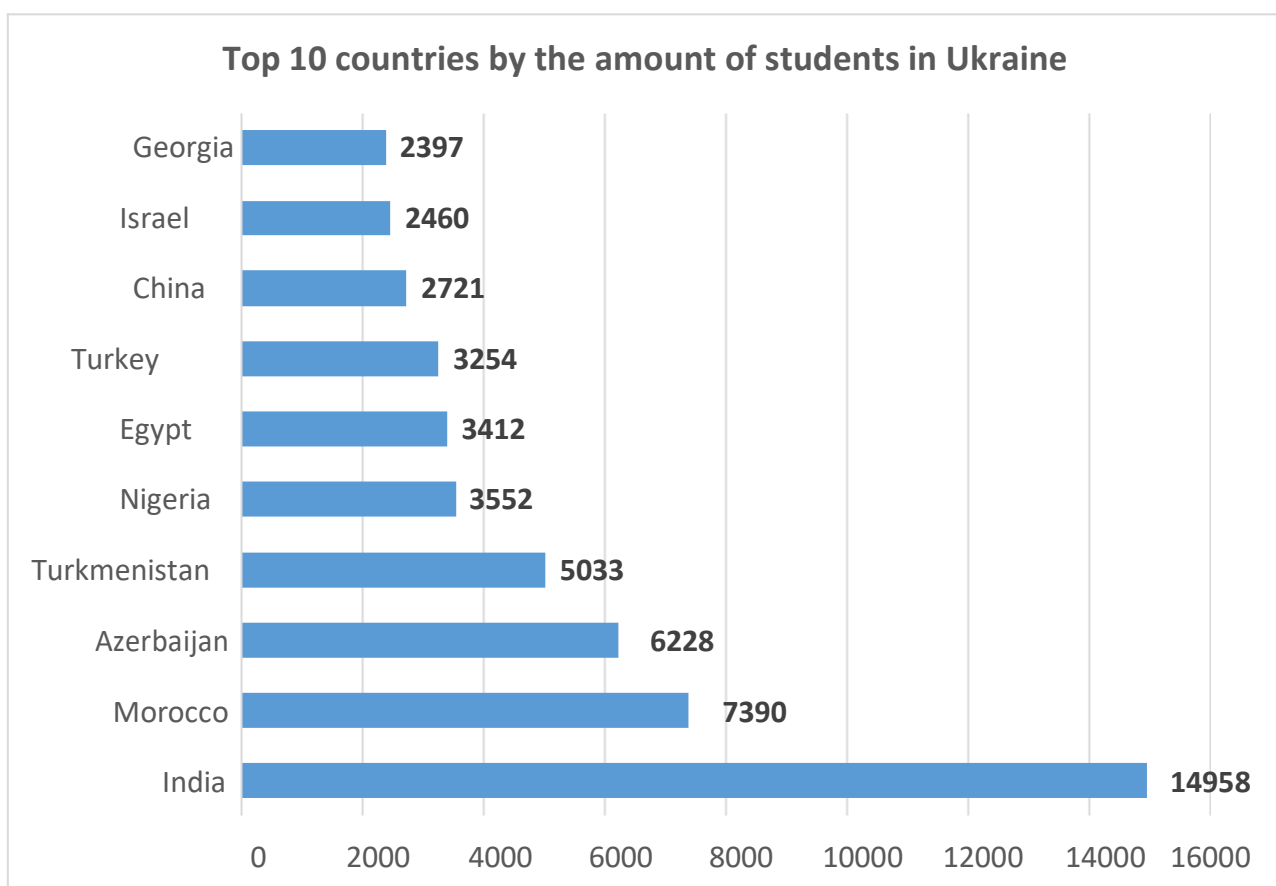


Fig. 19

Traditional “donors” of students to Ukrainian universities are Morocco, Azerbaijan, Turkmenistan, Nigeria, and Egypt. Over the past years, rapid growth has been demonstrated by applicants from India, which allowed them to come out on top in 2019 on these indicators.

The number of registered invitations for foreign applicants of higher education is also worth attention (Fig. 20).

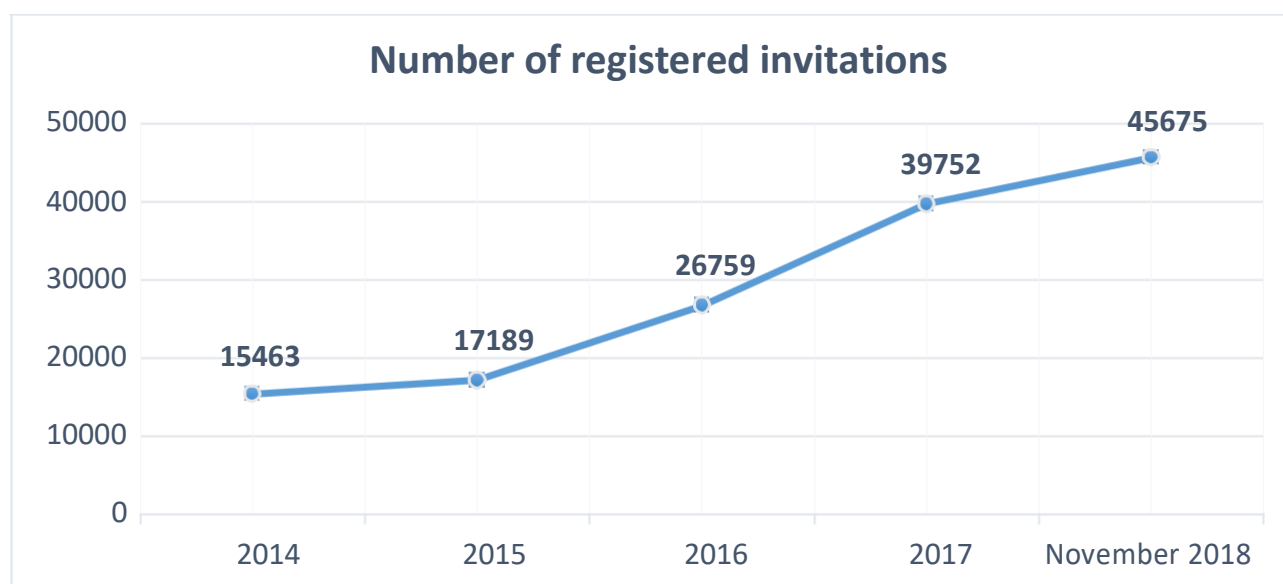


Fig. 20

The gradual growth of this indicator during 2014 and the beginning of a rapid increase in 2015 indicates that, despite the military actions in Donetsk and Luhansk regions and the annexation of Crimea, Ukraine is becoming more attractive for foreign applicants, especially for its chosen course towards European Integration and the proximity of the European Union's borders.

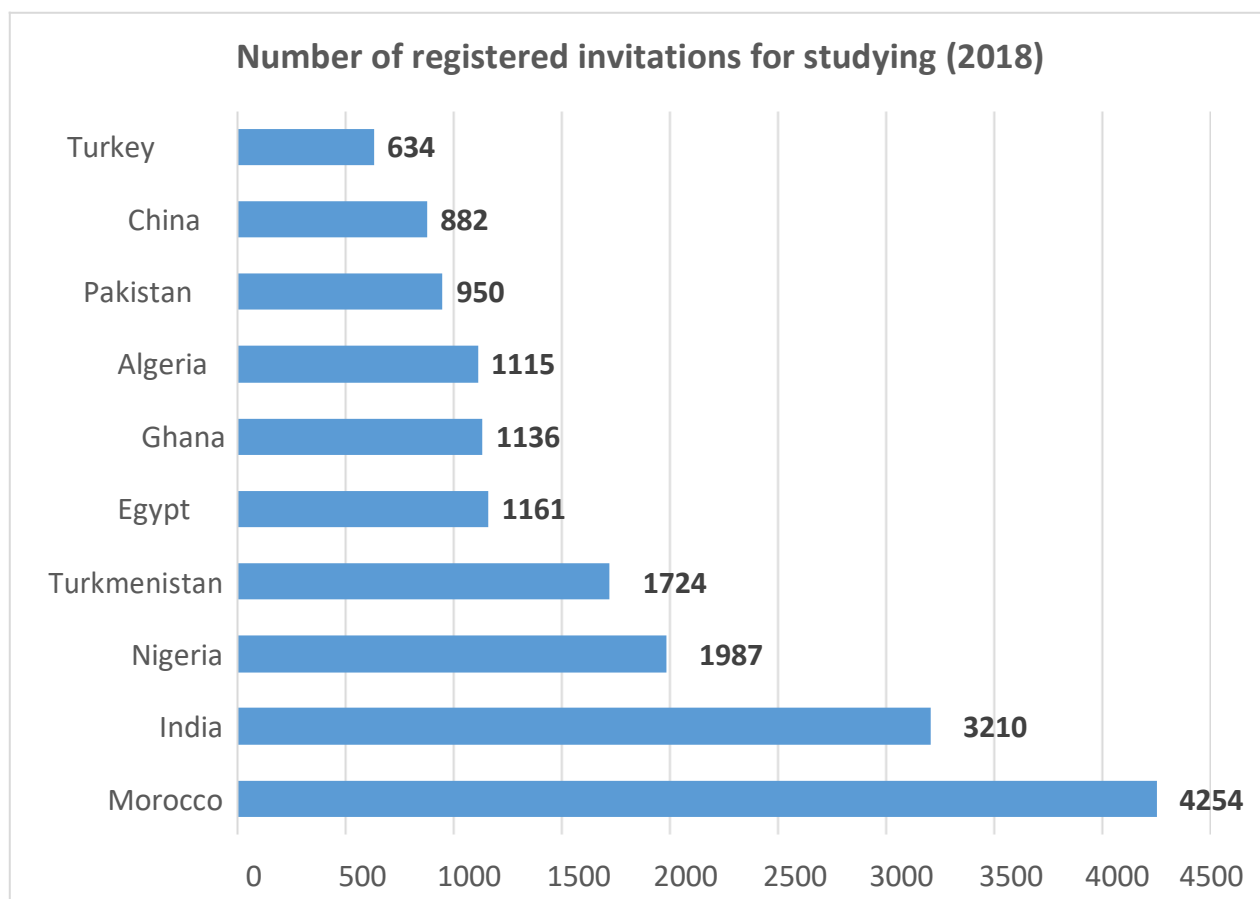


Fig. 21

Alongside this, we shall note that the ranking of countries whose citizens study in Ukraine does not quite correspond to the number of registered and received invitations for foreign citizens. Thus, the greatest demand for Ukrainian education is observed among the citizens of Morocco, who in 2018 received more than 4 thousand official invitations. Next is India (a little bit more than 3 thousand), Nigeria and Turkmenistan (almost 2 thousand each), Egypt, Ghana, and Algeria (about 1 thousand each). The Top 10 countries with the highest number of registered invitations for study are shown in Fig. 21.

We draw attention to that obvious fact that in 2018 a significant number of invitations were registered for citizens of countries such as Ghana, Algeria, and Pakistan, although these countries are not included in the Top 10 countries by the number of students in Ukraine. This may indicate either a gradual process of increasing interest in Ukraine on the part of these African and Asian countries, or – which seems more likely – illegal and not quite legal actions related to the processes of migration and studying of foreign citizens in Ukraine.

The Top 10 Ukrainian higher education institutions by number of registered invitations as of November 2018 is presented in Fig. 22⁵⁴.

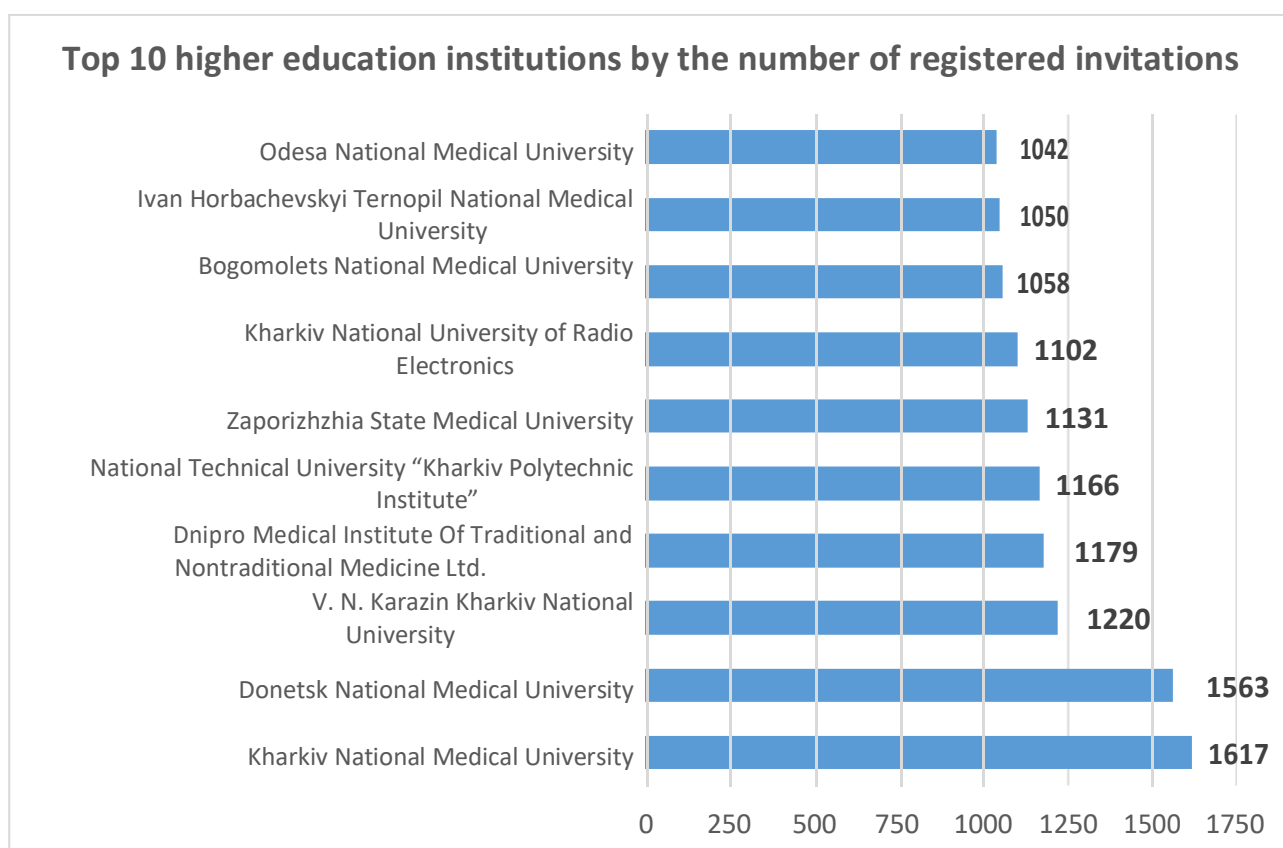


Fig. 22

The high fourth position in this list of 10 Ukrainian higher education institutions of Dnipro Medical Institute of Traditional and Nontraditional Medicine Ltd is surprising - next to Ukraine's better-known national medical and technical universities. This university,

according to its official website⁵⁵, is a place where more than 700 Ukrainian and foreign students study in “Medicine” and “Dentistry” programmes.

If we take into account the specialisation of universities, then nine out of ten higher education institutions with the highest number of foreign students (Fig. 23) are specialised medical institutions (Kharkiv National Medical University, V. N. Karazin Kharkiv National University, Odesa National Medical University, Bogomolets National Medical University, Zoprizhzhia State Medical University, Dnipropetrovsk Medical Academy of Health Ministry of Ukraine", Vinnytsia National Medical University named after M. I. Pirogov, Ivan Horbachevskyi Ternopil State Medical University of the Ministry of Health of Ukraine, Bukovinian State Medical University).

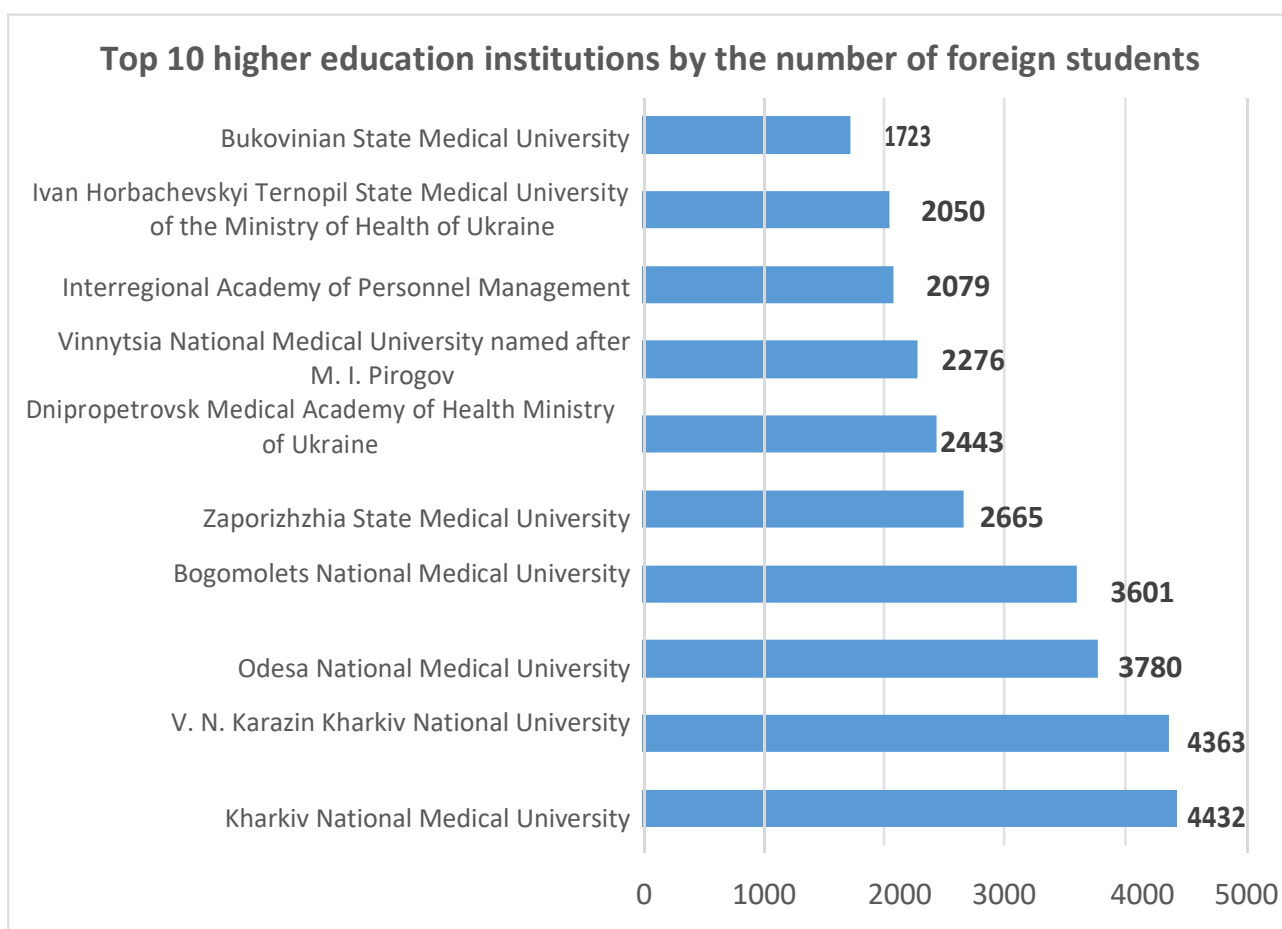


Fig. 23

We highlight separately from this list of the Top 10 higher education institutions in terms of the number of foreign students, the PLC "Interregional Academy of Personnel Management", which, in addition to its specialisation, also differs in the form of ownership.

The leadership of Kharkiv universities, in addition to its objective attractiveness for students, is also explained by the beginning of military operations in the East of Ukraine and the mass outflow of foreigners from the Donetsk and Luhansk Regions – many foreign students transferred from these regions to Kharkiv with the outbreak of hostilities.

In general, according to the Ministry of Education and Science⁵⁶, the most popular areas of studying for international students are medical majors, management, finance, and law (see Fig. 24).

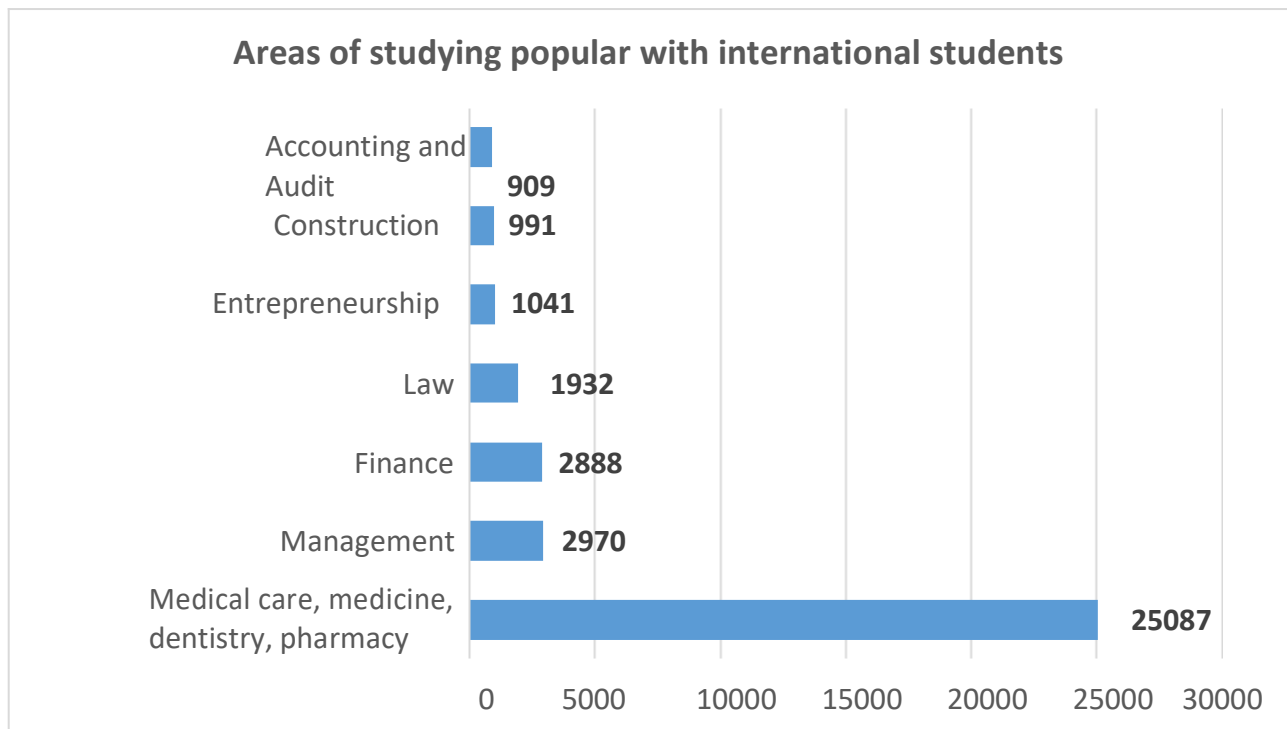


Fig. 24

Without focusing on medical specialties, the authors of research conducted in 2017⁵⁷ offer a brave and obvious hypothesis that a significant portion of those who study to become future “managers” “financiers”, “lawyers” etc. are part-time students, some of whom are actually buying the status of student and diplomas in private higher education institutions.

Interesting in the context of the problem of providing higher education for citizens of foreign countries is the study of S. A. Moroz⁵⁸, in which the author analyses the dynamics of changes in the number of foreign students in the most popular Ukrainian universities compared to world universities. For example, world universities that lead the World University Rankings have an average share of international students and teaching staff in the range of 31%. Statistical information provided by S. A. Moroz, is evidenced by the fact that the share of foreign students in domestic higher education institutions (from 7.09 % to 2.57 %) is quite insignificant and, in its value, corresponds to the lowest indicators of those universities in the world in the average that are at the lowest positions in the World University Rankings.

Although these not very pleasant conclusions, we have seen twice the velocity of increase in the number of higher education institutions with foreign students over the past four years: from 185 universities in 2015 to 443 universities in 2019 (see Fig. 25).

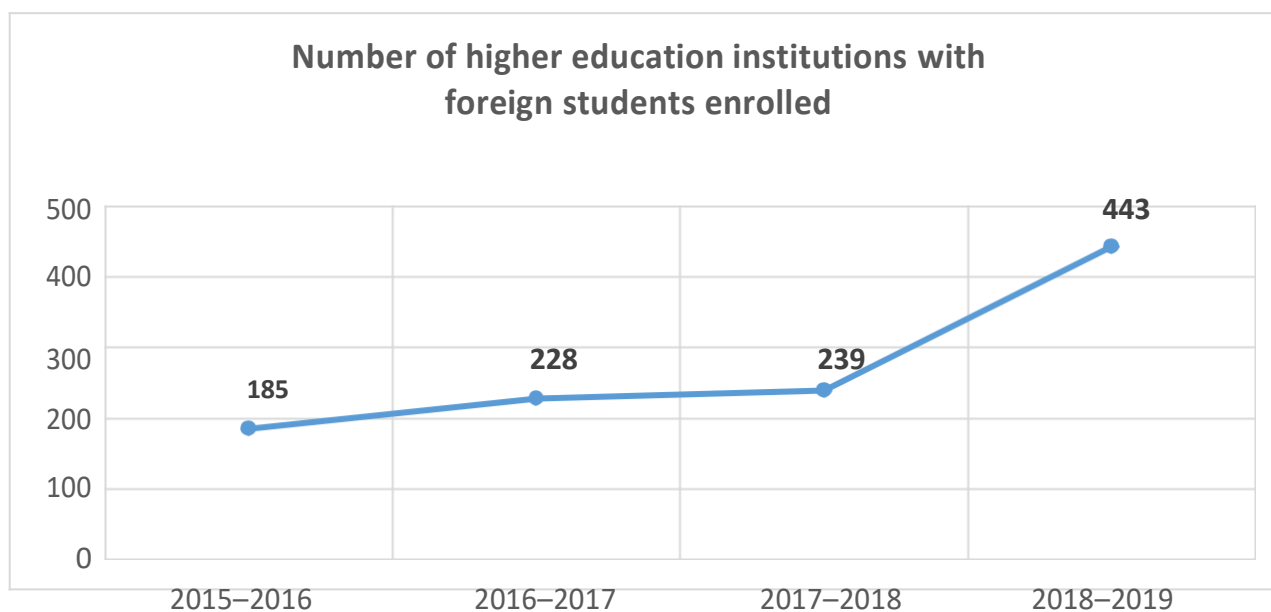


Fig. 25

It is obvious that in conditions of limited financial resources and considering the desire of administrations of higher education institutions to attract additional funds, the network of institutions enrolling foreign students will continue to grow in the future. At the same time, increasing the quality of higher education applicants from foreign countries will not be possible without improving the professional qualifications of teaching staff and improving the material and technical base. Indeed, a significant number of complaints have already been received by some universities, including complaints involving lack of a clinical base for practicing, and studying medicine only through books⁵⁹.

Another problem that needs to be addressed immediately is that of private firms that act as intermediaries between foreign applicants and higher education institutions. The activities of these middlemen often lead to critical situations and cause financial losses to the state and damages to the image of Ukraine in general.

In the context of teaching foreigners in Ukrainian higher education institutions the problem of language of instruction is very complicated: only about 10% of applicants from other countries are enrolled in preparatory courses for the studying of the Ukrainian language. The positive aspect here is the reduction in the number of foreign students who study in Russian. In comparison with 2014-2015, after the Revolution of Dignity, the number of foreign students studying Ukrainian increased by almost 33 %, while those studying Russian and English decreased by 25% and 7%, accordingly. According to statistics from the Ministry of Education and Science of Ukraine⁶⁰, almost half of foreign students receive education in Ukrainian. Data on learning languages and the dynamics of their changes are presented in Table 3.

Table 3

Language of education	2014-2015	2015-2016	Changes (%)
Ukrainian	10442 (17 %)	31507 (50 %)	+33 %
Russian	36185 (57 %)	20331 (32 %)	-25 %
English	16504 (26 %)	12064 (19 %)	-7 %
French	40 (0,06 %)	2 (0,003 %)	-0,06 %
German	1 (0,002 %)	2 (0,003 %)	+0,001 %

Note that in 2019, there were a number of scandals related to foreigners studying in Ukraine. The embassies of several states complained about corruption schemes during enrollment and training of students, as well as the poor quality of teaching in Russian and English. As a result, an important innovation in 2020 should be a trial exam in the form of an external independent assessment of the language skills of foreign students after the end of the first year of studies⁶¹.

Moreover, in November 2019, the National Agency for Higher Education Quality Assurance adopted a decision related to the humanities component of the educational process – in compliance with language legislation and other Laws of Ukraine⁶². During the first accreditations conducted by NAQA, several cases of subjects being taught in Russian were revealed. Article 48 of the Law of Ukraine “On higher education” and Article 7 of the Law of Ukraine “On education” expressly indicate that the language of education process in Ukrainian higher education institutions is Ukrainian. Domestic legislation draws attention to the fact that teaching may be provided in English or in the languages of the European Union countries in some cases. In particular, English is of particular importance for the development of research and higher education. The National Agency has warned higher education institutions that violations of language legislation, including teaching academic subjects to foreigners in other languages than Ukrainian will be taken into account during accreditation.

1.7. Ukrainian Students Abroad

With respect to Ukrainian students studying abroad, we draw attention to the fact that the most complete study of this issue to date was presented in the publication “Ukrainian Students Abroad: Data for the 2017-18 Academic Year”⁶³, prepared by the analytical center CEDOS in 2019.

According to this research, there were 77,424 people with Ukrainian citizenship studying at foreign universities in 2016-2017. This was approximately 8% of the total number of those who study in full-time educational programmes in Ukraine. This number is comparable to the number of foreign students coming to study in Ukraine (i.e. almost 76 thousand foreigners in 2019).

Number of Ukrainian students abroad, 2016-2017 academic year

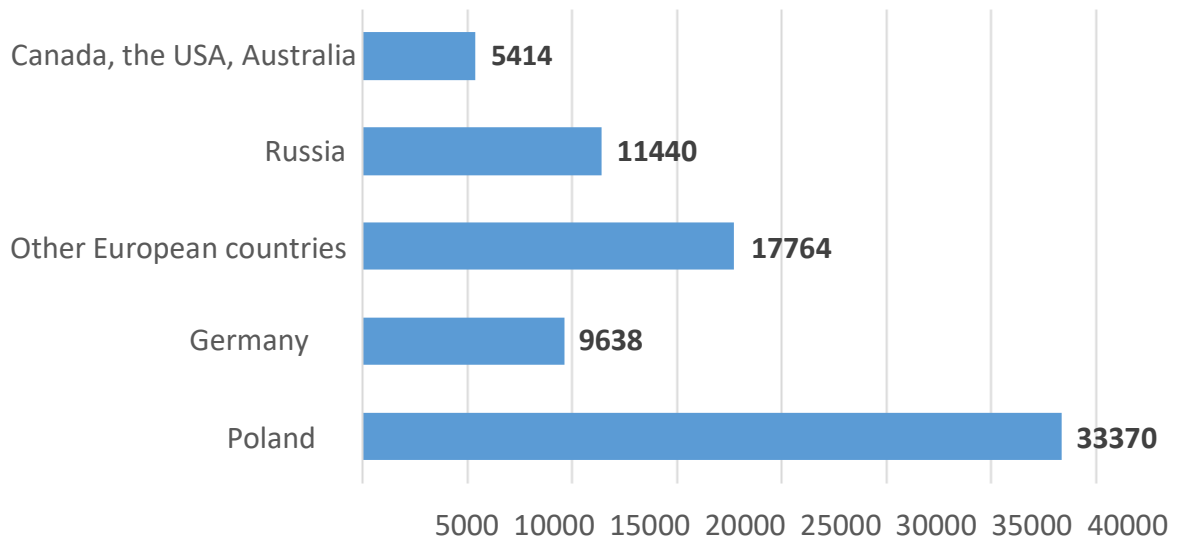


Fig. 26

Traditionally, our compatriots choose higher education institutions in Poland, the Russian Federation, Germany, Canada, the Czech Republic, Italy, the United States, Spain, Austria, France, Slovakia, and Bulgaria. In total, over the past nine years, the number of Ukrainians who have expressed a desire to study at a foreign university has more than tripled – from 24,104 to 77,424 people⁶⁴.

Specific destinations for study are shown in Fig. 26. More than 33 thousand Ukrainian students study in the Republic of Poland (this is 55% of all students studying abroad; at the same time, it is also the country with the highest rate of labour migrants from Ukraine), about 10 thousand — in Germany, more than 17 thousand — in other European countries. Undoubtedly, the high rate of Ukrainian students in the Russian Federation (which is more than 11 thousand) causes serious concern and anxiety.

1.8. Higher Education Expenditures

According to Article 78 of the Law of Ukraine "On Education"⁶⁵, the state provides allocations for education in the amount of at least 7% of the gross domestic product. This indicator was almost reached in 2013 (6.9 % of GDP); this figure was the lowest in 2016 (5.4 % of GDP). In 2019, allocations for education in Ukraine amounted to 6.25 % of GDP. However, given the rapid fluctuations of the national currency relative to the US dollar, the actual allocations for education totaled very different amounts in different years.

It should be noted that the most complete and detailed analysis of the education and science budget for 2013-2019 was carried out by the CEDOS research centre as part of the initiative to develop analytical centers in Ukraine⁶⁶.

The key point in the CEDOS report: expenses for education and scientific and technical activities are growing in Ukraine from year to year. Here we will try to analyse

the state budget expenditures taking into account the exchange rate of the hryvnia to the US dollar,⁶⁷ comparing these figures with the levels of funding for education and science in other states.

Table 4 presents the volume of state budget expenditures (General and special funds) for education in 2013-2019 in million hryvnias.

Table 4

Amount of expenses	2013	2014	2015	2016	2017	2018	2019 (as of 01.10.2019)
GDP of Ukraine	1 522 657,0	1 586 915,0	1 988 544,0	2 385 367,0	2 983 882,0	3 558 706,0	4 022 100,0
Expenses for education (consolidated budget)	105 538,7	100 109,5	114 193,5	129 437,7	177 915,8	210 032,3	250 602,5
In US dollars	13 208,8	6 352,1	4 758,06	4 760,4	6 340,5	7 582,4	10 428,7
% to GDP	6,9	6,3	5,7	5,4	6,0	5,9	6,2
Expenses for Higher education (consolidated budget)	30 003,3	28 343,8	30 981,8	35 233,6	38 838,2	44 243,6	55 425,4
In US dollars	3 755,1	1 798,4	1 290,9	1 295,8	1 384,1	1 597,2	2 306,5

Thus, in 2013, state expenditures on primary/secondary education and higher education were \$13 208.8 million and \$3 755.1 million respectively. In 2014, after a rapid jump in the exchange rate, these indicators (in dollar equivalent) began to fall, reaching their minimum in 2015, after which a gradual growth began. Already in 2019, we see a significant increase in expenses compared to previous years, but it is still significantly less than the funding level of 2013 in dollar equivalent. Expenditures of the state budget of Ukraine for education and higher education in US dollars are shown in Fig. 27 and 28.

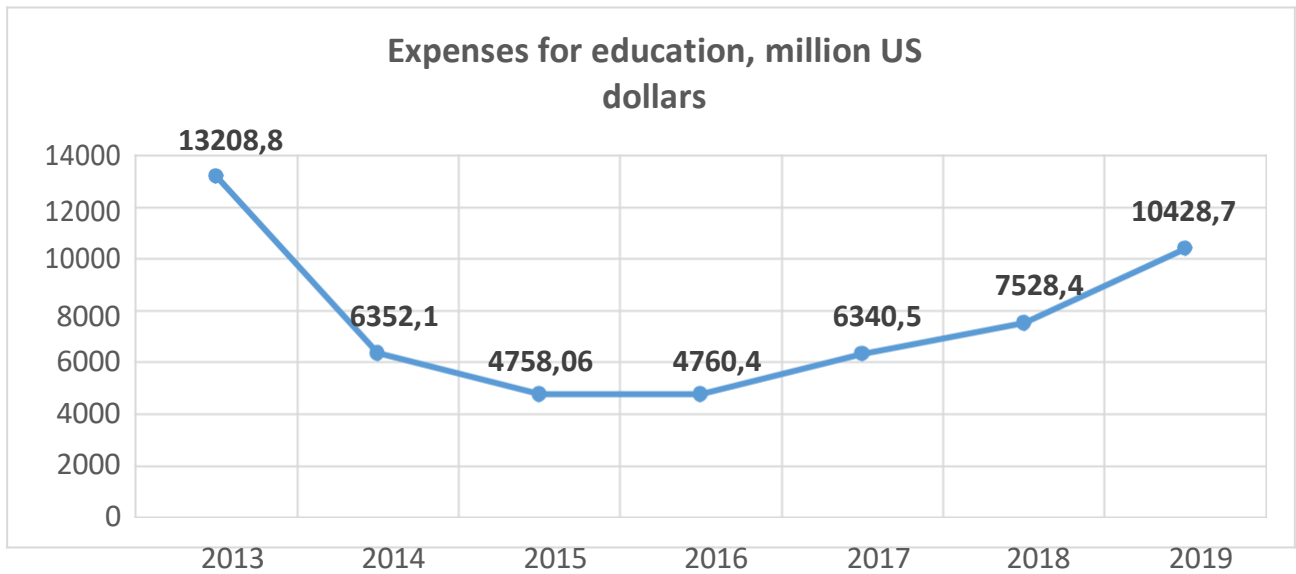


Fig. 27

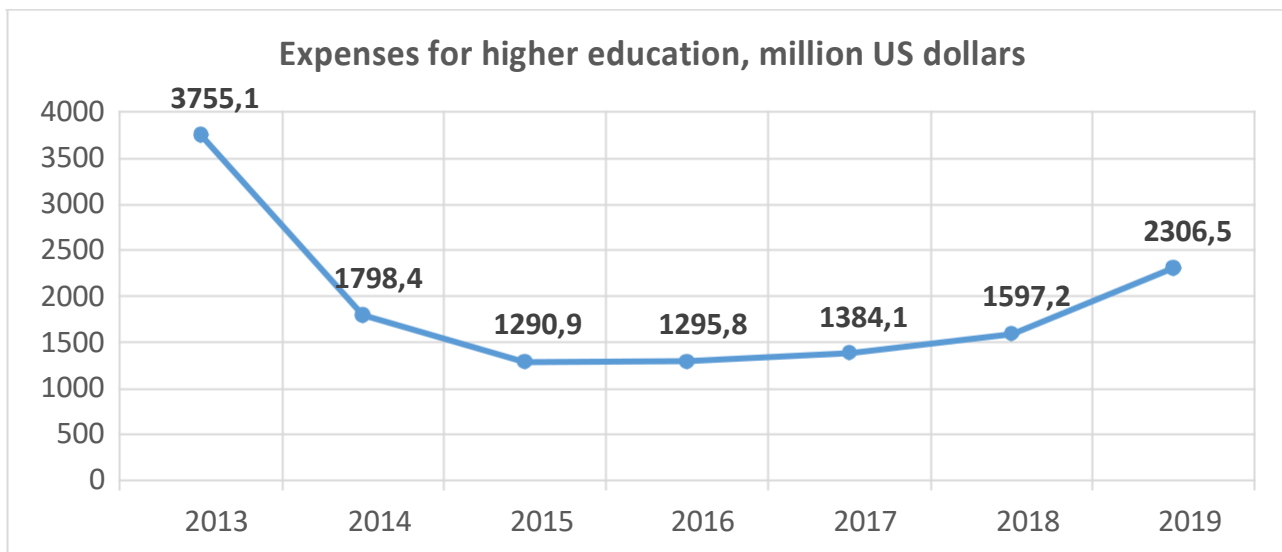


Fig. 28

Expenses for education in Ukraine in 2019 equaled approximately 6% of GDP – a fact that allows us to look optimistically at the future prospects of state expenditures on education and science. According to these indicators, we are in the same group as the developed countries of the world. However, in absolute terms, the dollar equivalent of the state's expenditures on education and higher education and research is very low. The problem here is not that the state does not allocate enough funds for education, but that it does not earn enough to increase the GDP.

For comparison, let us next present indicators (in percentages of GDP) of expenditures on education in countries such as the United States, Great Britain, Germany, France, Poland, Russia, Belarus, and Georgia⁶⁸ (see Table 5).

Table 5⁶⁹

Country	2013	2014	2015	2016	2017
USA	4,93	4,96	-	-	-
Great Britain	5,59	5,66	5,61	5,49	-
Germany	4,93	4,92	4,81	4,80	-
France	5,50	5,51	5,46	5,43	-
Poland	4,94	4,91	4,82	4,64	-
Russian Federation	3,76	4,01	3,83	3,71	-
Belorus	5,01	4,82	4,79	4,95	4,82
Georgia	-	-	-	3,78	3,85
Ukraine	6,67	5,87	-	5,01	5,41

Ukraine's index is one of the highest here: we are second (only after France and Great Britain) and have got ahead of such post-Soviet countries as Belarus, the Russian Federation and Georgia.

In terms of budget expenditures as a percentage of GDP⁷⁰, Ukraine is already second (only after the United Kingdom) and ahead of the United States, Germany, France, Poland, Russia, Belarus, and Georgia (Table 6).

Table 6

Country	2013	2014	2015	2016	2017
USA	1,34	1,36	1,37	1,21	-
Great Britain	1,34	1,38	1,28	1,41	-
Germany	1,31	1,31	1,25	1,25	-
France	1,24	1,25	1,25	1,23	-
Poland	1,21	1,18	1,22	1,06	-
Russian Federation	0,82	-	0,81	0,81	-
Belarus	0,88	0,81	0,80	0,80	0,79
Georgia	-	-	-	0,42	0,39
Ukraine	2,13	1,85	-	1,53	1,35

As we have already mentioned, in absolute figures in the dollar equivalent, the percentage of GDP for education and higher education in Ukraine does not look so optimistic. Of course, as a developing country, Ukraine's spending is far less than the level of developed economies like the United States, Great Britain, and other countries of the European Union, and this discrepancy is striking (see Tables 7 and 8).

Table 7

**Budget expenses for education in the USA, Great Britain, Germany, France
Poland, the Russian Federation, Georgia, million US dollars⁷¹**

Country	2013	2014	2015	2016	2017
USA	798 681,82	832 820,61	-	-	-
Great Britain	149 574,91	155 989,30	170 229,81	158 925,73	-
Germany	185 185,50	191 850,84	162 481,94	167 800,24	-
France	154 617,25	157 213,17	133 229,42	133 920,61	-
Poland	25 896,12	26 769,06	22 978,82	21 897,18	-
Russian Federation	86 284,84	82 655,54	52 276,34	48 012,78	-
Belarus	3 783,51	3 797,50	2 702,78	2 361,93	2 624,82
Georgia	-	-	-	544,18	580,59
Ukraine	12 229,83	7 843,25	-	4 676,93	6 072,03

Table 8

**Budget expenses for higher education in the USA, Great Britain, Germany, France
Poland, the Russian Federation, Georgia, million US dollars⁷²**

Country	2013	2014	2015	2016	2017
The USA	217 458,39	229 044,64	239 344,46	220 602,74	-
Great Britain	35 836,05	37 946,37	38 847,76	40 710,24	-
Germany	49 042,89	51 008,95	42 162,53	43 604,21	-
France	34 906,83	35 536,70	30 363,92	30 221,77	-
Poland	6 333,01	6 451,33	5 809,76	5 001,94	-
Russian Federation	18 892,82	-	11 052,45	10 374,92	-
Belarus	665,26	641,56	452,89	380,30	432,53
Georgia	-	-	-	60,33	58,51
Ukraine	3 897,56	2 472,04	-	1 424,53	1 517,43

In 2013, Ukraine's education expenses in the dollar equivalent were twice less than those of its closest European neighbor, the Republic of Poland (26 billion against 12 billion US dollars). In terms of higher education funding (again in the dollar equivalent), during 2013-16 Ukraine's figures declined from 3.8 billion to 1.5 billion US dollars.

In November 2019, the Ministry of Finance of Ukraine, based on the collected data on the functioning of higher education institutions in 2018 (III–IV levels of accreditation), published an interactive analytical tool⁷³, which allowed for a comparative analysis of the activities of higher education institutions in the country in general and in individual institutions. In total, the Ministry of Finance analysed data from 176 higher education institutions, where the studies of 347 thousand students

were funded by the state. In 2018 total expenditures of the state budget (general fund) for the payment of studies provided by these institutions were 16 billion UAH (in the dollar equivalent – 578 million).

Analysis of the activities of higher education institutions in Ukraine confirmed that the training of specialists with higher education is concentrated in 5 major regions – Kyiv, Kharkiv, Lviv, Dnipropetrovsk and Odessa regions. In general, these five regions account for more than half (53 %) of all higher education institutions that receive funds from the state budget. The same higher education institutions teach more than 60% of students who are funded by the state, and their studies accounts for more than 67 % of state budget expenditures.

In 2018, the average estimated cost of educating one student using state funds was 46 thousand UAH, but in some institutions this figure exceeds the national average by almost twice or three times. The top 5 higher education institutions with the highest average spending per state-funded student are shown in Fig. 29.

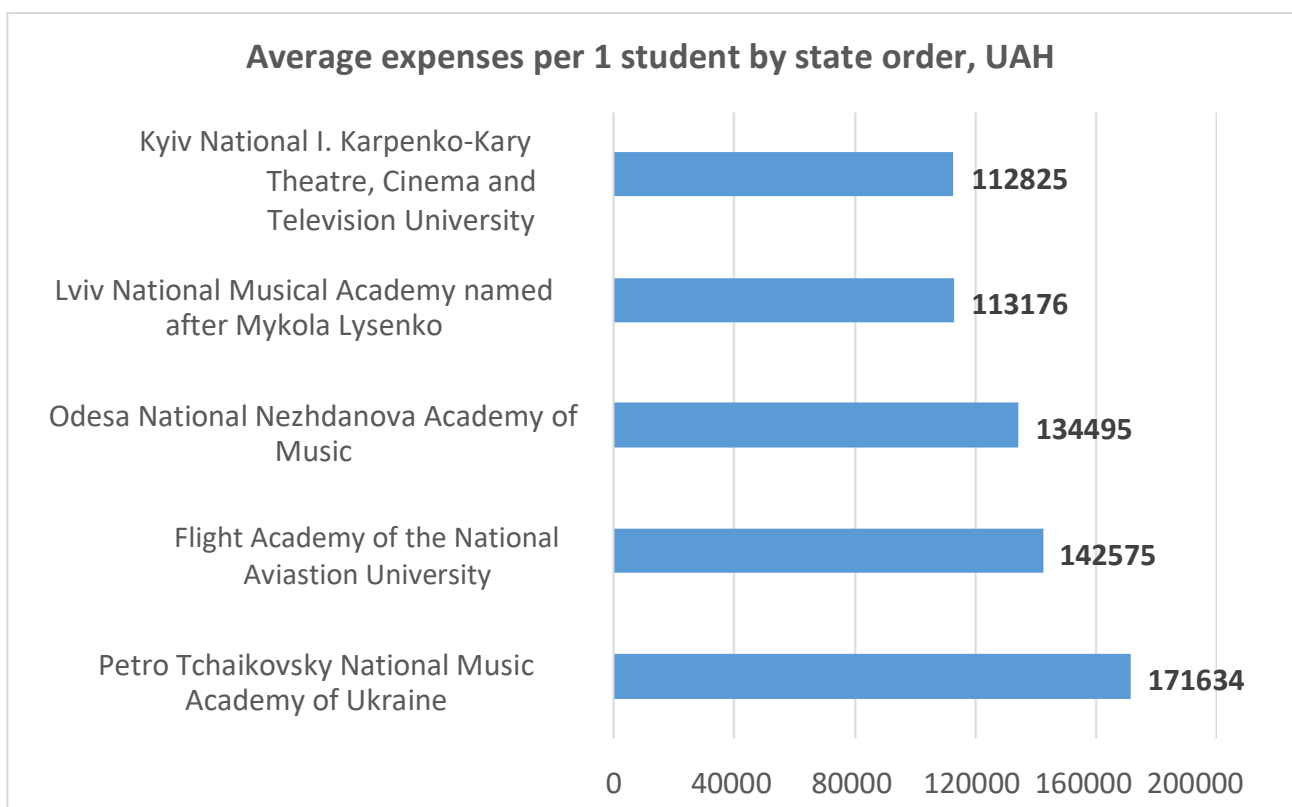


Fig. 29

In the cluster distribution of higher education institutions presented in the report of the national Agency “Meeting the Criteria for Granting and Confirming the status of a National Higher Education Institution”⁷⁴ in October 2019, the same four higher education institutions with the highest average costs for training of one student also fell into a separate group. It seems strange that the cost of training of one student using state funds should be highest for music and arts universities in a country that is resisting armed aggression. In this context, the noted expenses for students of the Flight Academy of the National Aviation University are an exception that confirms the irrationality of Ukraine’s state funding system.

See Fig. 30 for expenditures (excluding capital expenses) on higher education institutions by regions in 2018

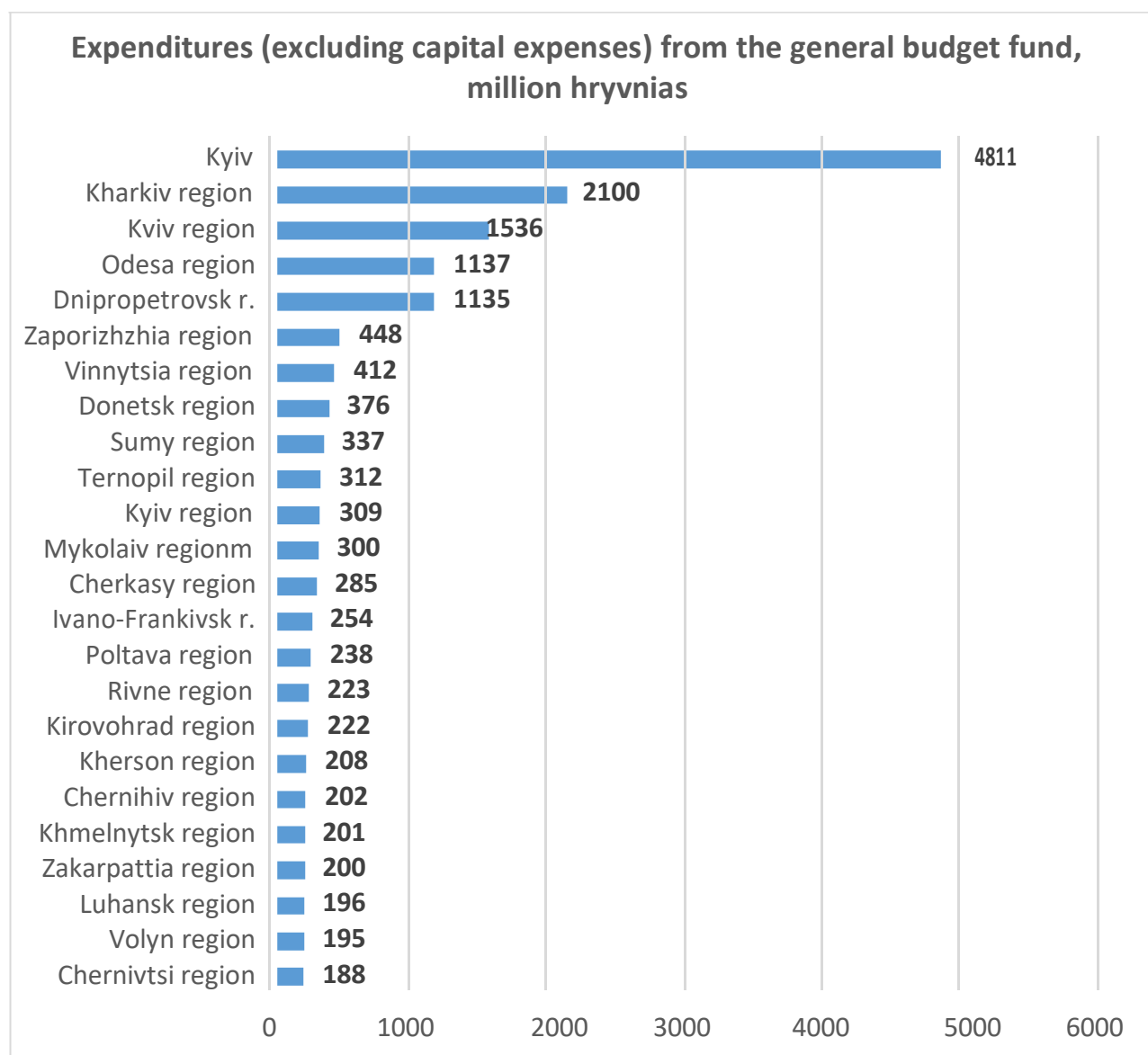


Fig. 30

Analysis of expenditures on higher education clearly demonstrates once again the existence of the main educational regions in Ukraine: Kyiv, Kharkiv, Lviv, Odesa and Dnipropetrovsk regions. At the same time, the ratio of total expenditures for these large educational regions and total expenditures for other areas is almost 2:1 in favour of the first group.

The analytical tool of the Ministry of Finance also presents the Top 10 universities by the average competitive score of students enrolled on the budget in 2018: state institution Dnipropetrovsk Medical Academy of the Ministry of Health of Ukraine, National University of Kyiv-Mohyla Academy, Kharkiv National Medical University, Ukrainian Medical and Dental Academy, Danylo Halytsky Lviv National

Medical University, Taras Shevchenko National University of Kyiv, Odesa National Medical University, Bogomolets National Medical University, Donetsk National Medical University, Zaporizhzhia State Medical University. The average competitive score of students enrolled to these higher education institutions is shown in Fig. 31.

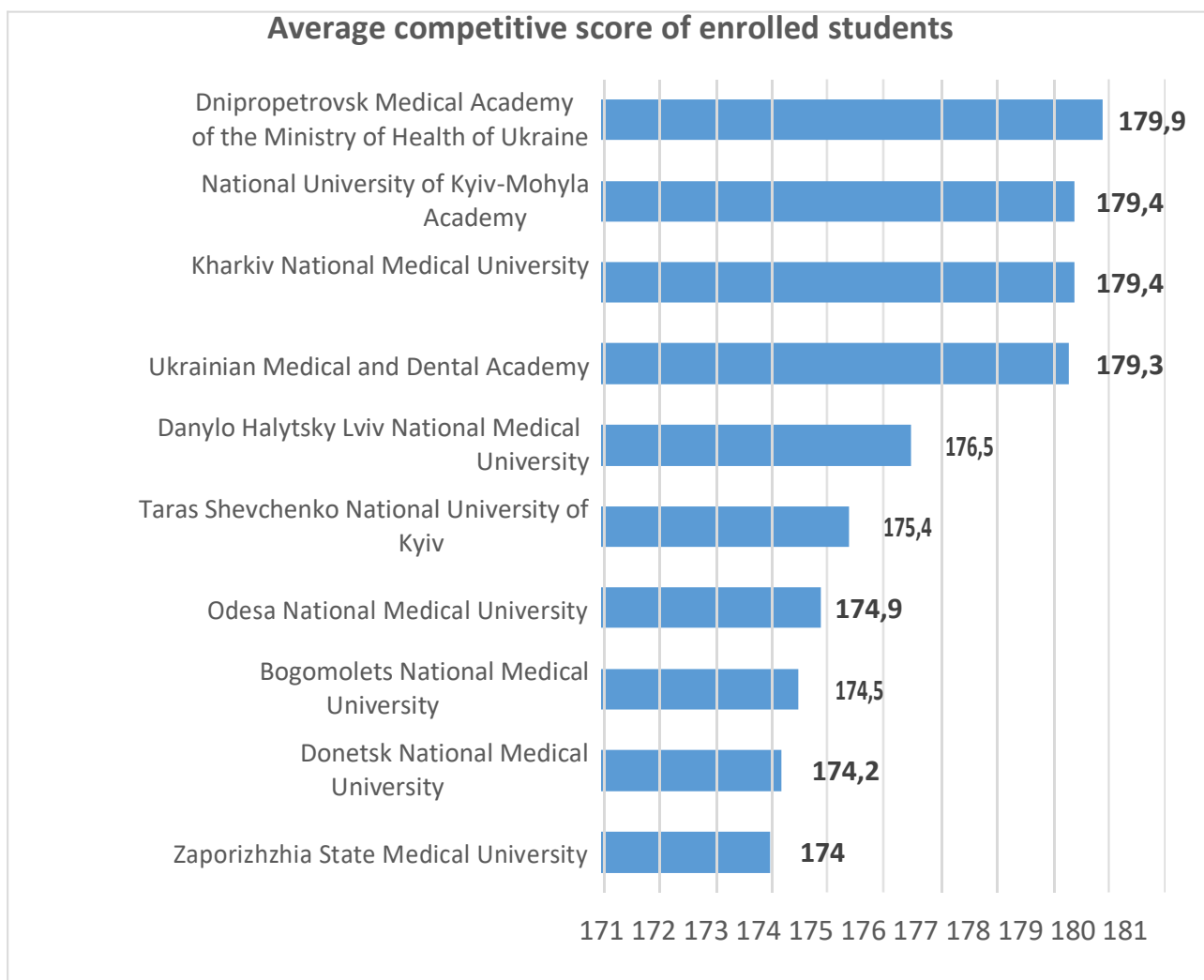


Fig. 31

In 2018, the average expenses per 1 state-funded student in these universities ranged from 30 thousand UAH (Kharkiv National Medical University) to 67 thousand UAH (Taras Shevchenko National University of Kyiv), and among these universities, none falls into the Top 5 higher education institutions according to this indicator (see Fig. 29).

Analogous information about the funding of the state-funded students in 2019 is not available in open sources at the time of preparation of this research. Therefore, let us pay attention to some general indicators of the results of the 2019 entrance campaign⁷⁵.

In 2019, the Ministry of Education and Science approved 79,854 places for training of bachelors (72,600 of them for full-time students), 55,379 places for masters (45,600 of them for full-time students), 4,346 and 459 places for PhD and Doctor of Sciences students accordingly. Compared to 2018, these figures represent an increase of 899 places for bachelor's degree and 6092 places for master's degree.

The number of state-funded places for training of bachelors in 2019 compared to 2018 was increased in such fields of study and majors:

01 Education	5,02 %
114 Statistics	14,3 %
132 Materials Science	12,5 %
135 Shipbuilding	13 %
162 Biotechnologies and Bioengineering	25 %
163 Biomedical Engineering	26,3 %
171 Electronics	9,1 %

The reduction of publicly funded places was seen in Social and Behavioural Sciences, Management and Administration:

051 Economics	3,6 %
052 Political Science	1,2 %
071 Accounting and Taxation	2,7 %
072 Finance, Banking and Assurance	3,5 %
073 Management	3,8 %

In general, the number of state-funded places in 2019 (bachelor's degree) was increased significantly for pedagogical, natural and engineering majors.

For pedagogical majors, the rating of the increase in the number of state-funded places in 2019 compared to 2018 looked like this:

Secondary Education (Ukrainian Language and Literature)	+ 116 places
Professional Education (Computer Technologies)	+ 104 places
Secondary Education (History)	+ 88 places
Secondary Education (Mathematics)	+ 66 places
Secondary Education (Physical Training)	+ 51 places
Primary Education	+ 47 places
Secondary Education (Informatics)	+ 35 places
Secondary Education (Chemistry)	+ 34 places
Secondary Education (Biology and Human Health)	+ 33 places
Preschool Education	+ 21 places

The list of engineering and natural science majors with an increased volume of state-funded places includes:

Transport Technologies (for Automobile Transport)	+ 123 places
River and Sea Transport	+ 84 places
Physical Therapy, Occupational Therapy	+ 67 places
Biotechnologies and Bioengineering	+ 39 places
Mining Industry	+ 39 places
Social Work	+ 32 places
Biology	+ 28 places
Transport Technologies (for Sea and River Transport)	+ 25 places
Forestry	+ 23 places
Environmental Protection Technologies	+ 20 places

A record 8,850 state-funded places were allocated to teach future military personnel.

In 2019, 831,493 applications were submitted for bachelor's and master's programmes (full-time study). Traditionally, the most popular higher education institutions were those of Kyiv, Lviv, Kharkiv and Dnipro:

Taras Shevchenko National University of Kyiv	412,41 applications
Ivan Franko National University of Lviv	36,078 applications
National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"	35,242 applications
Lviv Polytechnic National University	29,939 appl.
Kyiv National University of Trade and Economics	24,233 appl.
National Aviation University	22,324 appl.
V. N. Karazin Kharkiv National University	19,379 appl.
Kyiv National Economic University named after Vadym Hetman	18,686 appl.
Borys Hrinchenko Kyiv University	14,925 appl.
Oles Honchar Dnipro National University	14,672 appl.

In total, 10 higher education institutions received 256,890 applications, which is 31% of the total number of applications submitted in Ukraine for bachelor's and master's programmes (full-time education).

As for separate majors, by the number of submitted applications in 2019, the most preferred were:

Philology	65,419 appl.
Law	65,077 appl.
Management	50,207 appl.
Computer Science	39,376 appl.
Secondary Education	35,605 appl.
Journalism	30,247 appl.
Economy	28,178 appl.
Software Engineering	27,217 appl.
Psychology	25,680 appl.
Medicine	25,288 appl.

In total, 392,294 applications were submitted for these majors, which is 47% of the total submitted applications for bachelor's and master's programmes (full-time education).

In 2019, the highest passing grades for admission to the budget places were in “international” and “medical” majors:

International Law	194,25
International Relations, Public Communication and Regional Studies	(Ministry of Education and Science) 194,004 (Ministry of Culture) 186,25
International Economic Relations	190,84
Dentistry	189,176
Political Science	189,125
Journalism	188,75 (Ministry of Education and Science) (Ministry of Culture) 181,662
Medical Psychology	186,9 (Ministry of Health)
Culturology	(Ministry of Education and Science) 185,691 (Ministry of Culture) 172,176
History and Archeology	185,05
Public Management and Administration	183,804

In General, 226 higher education institutions (including branches) received state-funding for training of specialists ⁷⁷. The result of the entrance campaign was that 75.4% of 2019 applicants received recommendations for state-funded places for their first and second priority applications; 3% and 2.5% of applicants received state-funded places for the sixth and seventh priority accordingly. Almost 13% of applicants recommended

for admission to higher education institutions refused to study at the expense of the state, choosing tuition-based education in their preferred institution instead.

In comparison with 2018, 1 classical, 2 technical and 2 pedagogical universities received more state-ordered places:

Taras Shevchenko National University of Kyiv	+ 166 places
National Technical University “Kharkiv Polytechnic Institute”	+ 129 places
Vinnitsia Mykhailo Kotsiubynskiy State Pedagogical University	+ 100 places
Kharkiv Petro Vasylenko National Technical University of Agriculture	+ 93 places
Pavlo Tychyna Uman State Pedagogical University	+ 92 places

A total of 60,354 applicants received a recommendation for a state-funded place, of which more than 52,500 (87%) confirmed their intention to study in their chosen major. For the first and second priorities, 75% of applicants received a recommendation (21% of them were rejected), and for the sixth and seventh – almost 6% (more than 78% of them were rejected). At the same time, a fairly low percentage of applicants recommended for state funding (14%) took advantage of the rural coefficient.

Ranking of higher education institutions based on numbers of recommendations for state-funded places in 2019 (bachelor's degree based on full general secondary education):

National Technical University of Ukraine “Igor Sikorsky “Kyiv Polytechnic Institute”	3,838
Taras Shevchenko National University of Kyiv	3,043
Lviv Polytechnic National University	2,475
Ivan Franko National University of Lviv	2,262
V. N. Karazin Kharkiv National University	1,253
National Aviation University	1,081
National University of Bioresources and Natural Resources Use of Ukraine	1,035
National Technical University “Kharkiv Polytechnic Institute”	1,018
Kharkiv National University of Radio Electronics	898
Bohomolets National Medical University	853

In general, the leaders of the ranking – 10 higher education institutions in Kyiv, Kharkiv and Lviv – received 17,756 recommendations, which is almost a third (29%) of the total number of recommendations for state-funded places in Ukraine. Relatively high figures were also demonstrated by the so-called temporarily displaced educational institutions: Luhansk Taras Shevchenko national University (553 places); Vasyl Stus Donetsk National University (353 places); Taurian National University named After V. I. Vernadsky (342 places). Luhansk and Donetsk regions were also the leaders in increasing the number of students compared to 2018 — 28 % and 25 % accordingly.

1.9. Defense of Doctoral and PhD Theses

The Order of the Ministry of Education and Science of Ukraine No. 1057 of 14.09.2011⁷⁸ regulates the training of research personnel: PhD and Doctor of Science theses are defended, academic degrees are awarded and academic titles are granted in scientific majors.

Between 1993 and 2018, 19,920 Doctor of Science theses and 125,474 PhD theses were defended in Ukraine⁷⁹. The leaders in the subject area fields were Technical (4143 DoS and 21924 PhD theses), Economics (2497 and 18755 accordingly), and Medical Sciences (3117 and 15764 accordingly). The lowest number of defenses were in Cultural Studies (23 doctoral and 135 PhD defenses), architecture (57 and 353 accordingly), Military Sciences (37 and 427 accordingly), and Social Communication⁸⁰ (63 and 377 accordingly). From 2014, we have been facing a shortage of research personnel in the Military Sciences and Social Communications due to higher demands on these fields caused by the military aggression of the Russian Federation and the challenges of hybrid war.

Table 9 shows data on defenses of doctoral theses for 2013-2018.

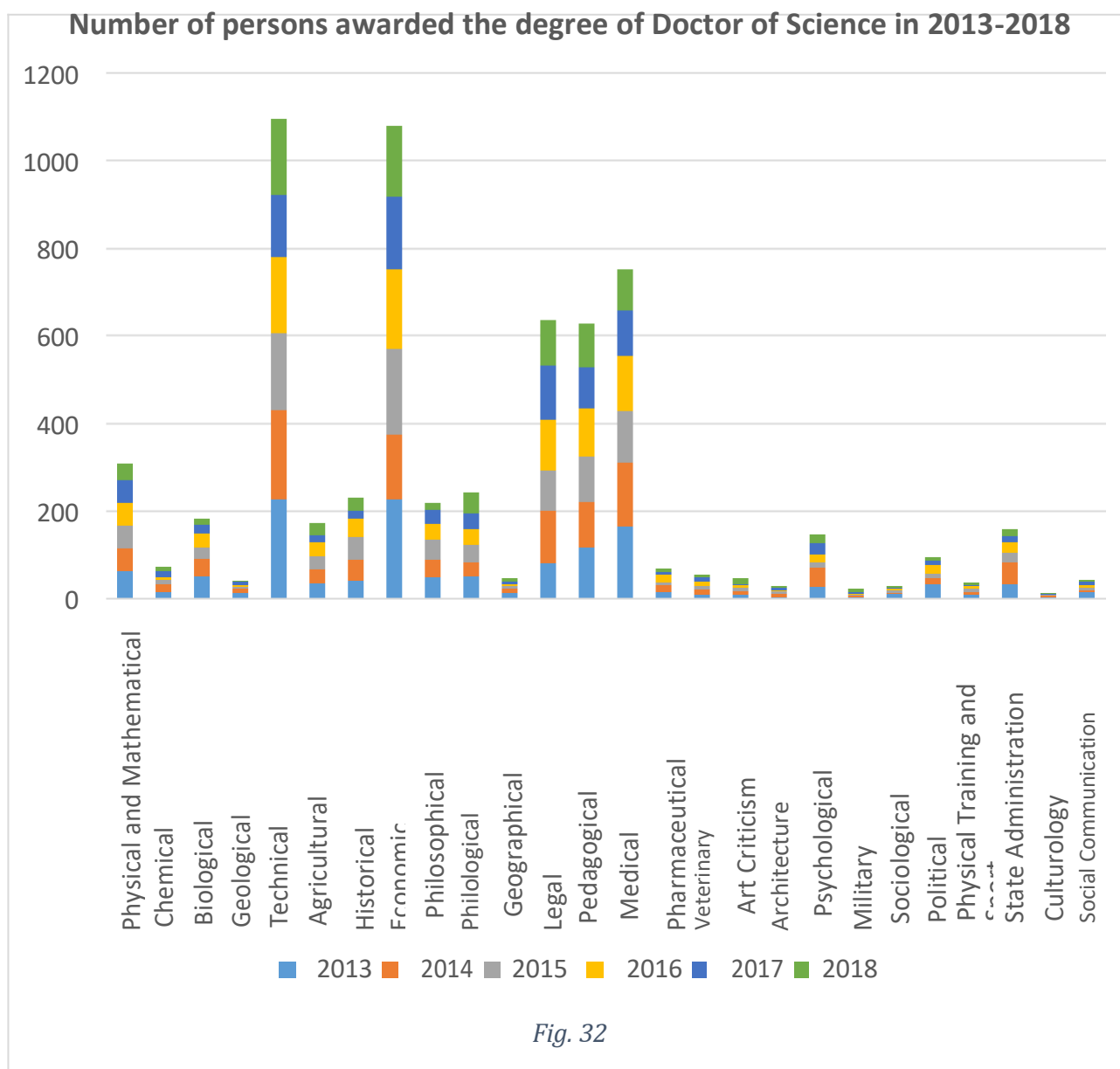
Table 9

Number of people awarded the Doctor of Science degree in 2013-2018, according to the subject area fields⁸¹

Subject area field	2013	2014	2015	2016	2017	2018
<i>Physics and Maths</i>	61	54	50	52	53	38
<i>Chemistry</i>	15	18	8	8	14	8
<i>Biology</i>	50	39	27	32	19	15
<i>Geology</i>	12	10	3	4	8	2
<i>Technical</i>	225	205	175	174	142	173
<i>Agricultural</i>	35	32	30	30	17	28
<i>History</i>	40	47	53	41	18	31
<i>Economics</i>	225	148	196	182	166	161
<i>Philosophy</i>	49	38	46	36	32	16
<i>Philology</i>	50	33	38	37	37	47
<i>Geography</i>	12	10	6	5	4	10
<i>Law</i>	81	119	92	114	125	105
<i>Pedagogy</i>	116	103	104	110	94	100
<i>Medicine</i>	164	146	117	126	104	94
<i>Pharmacy</i>	13	17	6	17	7	8
<i>Veterinary</i>	8	12	7	11	10	5
<i>Art Criticism</i>	7	9	8	5	4	13
<i>Architecture</i>	2	8	6	3	5	4
<i>Psychology</i>	26	44	12	18	25	21
<i>Military Sciences</i>	3	3	1	3	3	9

<i>Sociology</i>	9	3	7	3	2	4
<i>Politics</i>	32	14	9	20	11	9
<i>Physical Training and Sport</i>	7	8	6	7	1	7
<i>State Administration</i>	32	50	22	24	13	16
<i>Culture Studies</i>	2	3	2	1	1	3
<i>Social Communication</i>	13	5	5	7	8	4
All fields	1289	1178	1036	1070	923	931

Most of the defended DoS theses were in Technical, Economic and Medical Sciences; the least – in Culture Studies, Military Sciences and Sociology. In general, the number of people who were awarded the degree of Doctor of Science in 2013-2018 is shown in Fig. 32



The period 2013-2018 is characterized by a relative increase in the number of Doctor of Sciences theses in such fields as Legal and Military Sciences as well as Art Criticism. On the contrary, we see a significant reduction in Geological, Technical, Medical Sciences and Social Communications.

Slightly different trends occur in the distribution of PhD thesis defenses by the fields of study (see Table 10).

Table 10

Number of persons awarded the degree of Doctor of Philosophy in 2013-2018, according to fields of study

Fields of study	2013	2014	2015	2016	2017	2018
<i>Physics and Maths</i>	307	244	271	261	166	177
<i>Chemistry</i>	115	97	83	101	65	65
<i>Biology</i>	193	222	196	193	151	148
<i>Geology</i>	36	39	32	32	23	12
<i>Technical</i>	1212	1330	1113	1034	842	700
<i>Agricultural</i>	218	225	222	188	135	123
<i>History</i>	311	234	216	212	194	134
<i>Economics</i>	1397	1232	1191	956	637	554
<i>Philosophy</i>	158	129	126	120	76	54
<i>Philology</i>	402	409	355	314	306	222
<i>Geography</i>	71	85	49	32	31	33
<i>Law</i>	798	1023	899	939	760	642
<i>Pedagogy</i>	646	694	686	663	499	474
<i>Medicine</i>	771	736	682	636	577	555
<i>Pharmacy</i>	66	81	50	76	59	62
<i>Veterinary</i>	46	63	45	48	52	35
<i>Art Criticism</i>	121	86	89	72	114	72
<i>Architecture</i>	17	28	18	19	20	9
<i>Psychology</i>	211	236	187	172	149	113
<i>Military Sciences</i>	21	20	8	18	23	28
<i>Sociology</i>	42	23	36	27	11	9
<i>Politics</i>	129	100	115	112	73	57
<i>Physical Training and Sport</i>	71	81	60	62	61	56
<i>State Administration</i>	129	167	141	114	118	120
<i>Cultural Studies</i>	21	10	11	3	14	10
<i>Social Communication</i>	52	36	39	51	33	15
All fields	7561	7630	6920	6455	5189	4479

During 2013-2018, the largest number of PhD theses were defended in such fields as Technical, Economic, and Legal Sciences; the lowest number was defended in Culture Studies, Architecture, and Geological and Sociological Sciences (see Fig. 33).

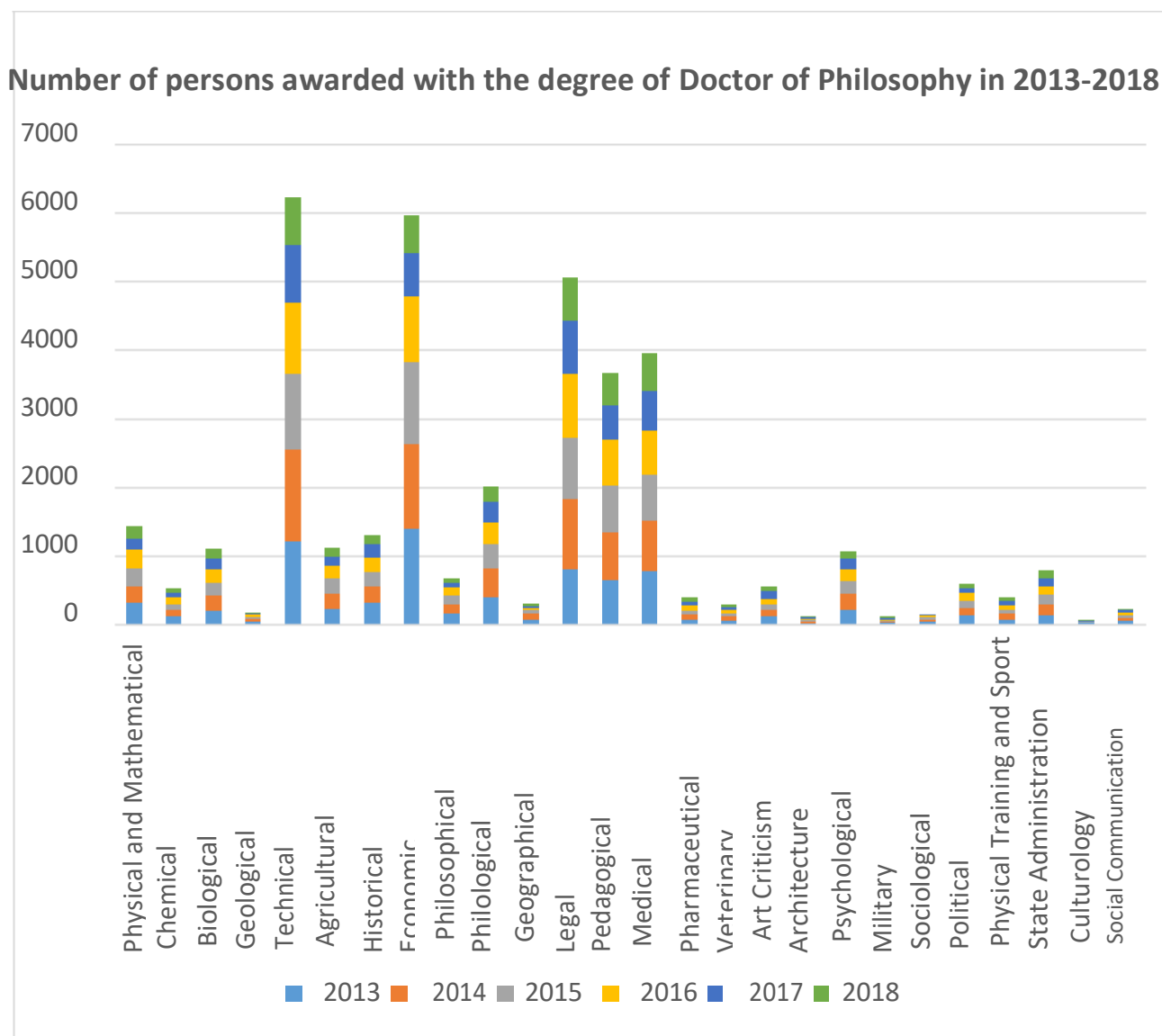


Fig. 33

Military Science demonstrated relative growth, and this is understandable given the current de facto state of war. The indicators of Pharmaceutical Sciences and State Administration are stable. In other fields, including Technical, Agricultural, Economic and Philological Sciences, there is a tendency to decline.

1.10. Expenses on Research Activity

The Law of Ukraine “On Scientific and Scientific Technical Activities”⁸² clearly defines the percentage of GDP that should be allocated to scientific research: “The state provides budget funding for scientific and scientific-technical activities in the amount of at least 1.7 percent of the gross domestic product of Ukraine”. However, in fact, according to the State Statistic Committee of Ukraine, the financing of scientific activities in Ukraine has decreased from 0.39 % of GDP in 2013 to 0.23 % in 2019. According to the Ministry of Finance, funding has even increased by 3352.8 million UAH in absolute

figures in comparison with 2013. However, in dollar equivalence, the funding has almost halved (from 746.7 million in 2013 to 387.8 million in 2019).

See budget expenditures for scientific activities in 2013-2019 (general and special funds) in millions of UAH in Table 11.

Table 11

Budget expenditures for scientific research activities in Ukraine

Amount of expenditures	2013	2014	2015	2016	2017	2018	2019 (as of 01.10.2019)
GDP	1 522 657,0	1 586 915,0	1 988 544,0	2 385 367,0	2 983 882,0	3 558 706,0	4 022 100,0
Expenditures For scientific and scientific Technical Activities (state budget)	5 966,1	5 222,7	5 307,1	5 289,4	7 089,6	8 520,2	9 318,9
In US dollars	746,7	331,4	221,1	194,5	252,6	307,6	387,8
% from GDP	0,39	0,33	0,27	0,22	0,24	0,24	0,23

When speaking of the percentage of funding for scientific activities compared to GDP during 2013-2017 (data for 2018-2019 are taken from the website UIS.Stat), for such powerful and economically developed countries as the United States, Great Britain, Germany, and France, these indicators range from 1.65 % (Great Britain in 2013) to 3.04% (Germany in 2017) (see Fig. 12). For Ukraine, similar indicators show a downward trend, starting from 0.76 % in 2013 and ending with 0.45 % in 2017.

Table 12

Budget expenditures for scientific research in the USA, Great Britain, Germany, France, Poland, the Russian Federation, Belarus, Georgia (% from GDP)

Country	2013	2014	2015	2016	2017
The USA	2,72	2,73	2,73	2,77	2,80
Great Britain	1,65	1,67	1,67	1,69	1,67
Germany	2,82	2,87	2,92	2,93	3,04
France	2,24	2,28	2,27	2,25	2,19
Poland	0,87	0,94	1,00	0,97	1,04
Russian Federation	1,03	1,07	1,10	1,10	1,11
Belarus	0,65	0,51	0,50	0,50	0,59
Georgia	0,08	0,18	0,32	0,30	0,29
Ukraine	0,76	0,65	0,61	0,48	0,45

According to the letter provided by the Ministry of Finance of Ukraine in response to our information request of 28.11.2019,⁸⁶ in the part "Expenditures on Education and

Scientific Activities in 2013-2019 (General and Special Fund)”, the indicator of expenditures on scientific and scientific and technical activities (state budget) in 2018 was only 0.24 %; as of 01.10.2019 – 0.23% of GDP.

In dollars, the differences between funding for scientific research in developed European countries, the United States, and Ukraine are catastrophic. The US budget shows the highest expenditures on the scientific sphere – from 455 billion in 2013 to 543 billion in 2017. The highest figures among the EU countries are demonstrated by Germany (103 billion in 2013 and 127 billion in 2017). In Ukraine, the most successful year for funding science in dollar equivalent was 2013 (about 3 billion US dollars). Then there was a gradual decrease in expenditures to 1.7 billion in 2017 (see Table 13).

Table 13

Budget expenditures on science in the USA, Great Britain, Germany, France, Poland, the Russian Federation, Belarus, Georgia in million US dollars ⁸⁷

Country	2013	2014	2015	2016	2017
USA	454 821 000,00	476 452 000,00	495 098 000,00	516 254 000,00	543 249 000,00
Great Britain	41 532 086,39	43 811 100,10	45 344 990,99	47 215 424,94	47 809 915,56
Germany	102 905 465,27	109 562 637,77	113 921 723,09	118 158 500,88	127 105 308,41
France	58 353 303,11	60 585 661,84	61 239 845,91	62 162 759,42	62 947 638,18
Poland	8 185 829,53	9 149 349,63	10 139 886,84	10 037 536,57	11 443 161,21
Russian Federation	38 607 042,33	40 330 178,24	39 726 715,96	39 881 939,87	42 268 897,32
Belarus	1 127 551,01	905 305,09	870 525,08	860 452,92	1 052 208,86
Georgia	26 987,81	63 515,34	114 249,73	112 017,33	115 147,14
Ukraine	2 990 317,76	2 428 496,64	2 093 774,38	1 707 386,42	1 651 565,70

According to the Ministry of Finance of Ukraine⁸⁸, expenditures on scientific and technical activities in Ukraine from the state budget were: in 2013 – 747 million US dollars, in 2014 – 331 million US dollars, in 2015 – 221 million US dollars, in 2016 – 195 million US dollars. Starting from 2017 (252 million US dollars), we have been seeing a gradual increase to \$ 307 million. In 2018, as of 01.10.2019, the positive trend continued and is already \$ 387 million US dollars.

In November 2019, the Ministry of Education and Science released bottom-line information regarding the funding of research in higher education institutions and research institutions of the Ministry of Education of Ukraine for 2017-2019⁸⁹. According to the data, the total funding of research in higher education institutions and research institutions according to the results of the competition in 2019 showed a slight increase and was more than 613 million UAH (in dollar equivalent — about 25 million); in 2017 and 2018, this figure was almost 572 million UAH (20 million USD) and 603 million UAH (22 million USD) accordingly.

In 2019, the state allocated approximately 330 million UAH for fundamental research, almost 200 million UAH for applied research, and 50 million UAH for scientific developments.

Most funding for fundamental and applied research and scientific developments in fields in 2017-2019 was received was by:

04/ Nuclear Physics, Radiophysics and Astronomy	176 million UAH
16/ Chemistry	174 million UAH
03/ General Physics	169 million UAH
17/ Economics	153 million UAH
06/ Research Problems of Material Science	123 million UAH

The least amount of total funding for fundamental and applied research and scientific developments over the last three years has been allocated to such sections:

21/ Literary Studies, Linguistics and Art Criticism	15 million UAH
18/ Law	16 million UAH
24/ Research Problems of Food Technologies and Industrial Biotechnologies	22 million UAH
08/ Mining and Mineral Processing Technologies	28 million UAH
22/ Earth Sciences	32 million UAH

In 2019, the following Ukrainian universities and research institutions received the largest amounts of state funding for fundamental and applied research and scientific developments:

Taras Shevchenko National University of Kyiv	97 million UAH
V. N. Karazin Kharkiv National University	70 million UAH
National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"	27 million UAH
Lviv Polytechnic National University	26 million UAH
National University of Bioresources and Resource Use Of Ukraine	23 million UAH
Odesa I. I. Mechnikov National University	22 million UAH
National Technical University "Kharkiv Polytechnic Institute"	22 million UAH
State educational and scientific institution "Academy of Financial Management"	20 million UAH
Ivan Franko Lviv National University	17 million UAH
National Aviation University	14 million UAH

In total, these Top 10 institutions received approximately 338 million UAH in 2019, which is 55% of the state funding for fundamental, applied research and scientific developments for all higher education and research institutions in Ukraine.

Taking into consideration the indicators of expenditures on scientific activities in the developed countries of the world, it becomes obvious that there is a need for much more funding for research and development in Ukraine. In addition to the gradual increase in the budget for science, grants should become the primary source of funding. Thus, for the implementation of a fundamentally new mechanism for funding of scientific research, the state budget provided 100 million UAH to support the conduct of scientific research by those universities that will have the highest certification rating based the results of the state certification.

PART 2

INTERNAL HIGHER EDUCATION QUALITY ASSURANCE IN HIGHER EDUCATION INSTITUTIONS

2.1. Analysis of Parameters and Configurations of Internal Education Quality Assurance in Domestic Higher Education Institutions

According to Article 16 of the Law of Ukraine “On Higher Education” of 2014, internal systems of quality assurance of higher education institutions (systems of ensuring the quality of educational activities and the quality of higher education) are a component of the quality assurance system of higher education in Ukraine. Therefore, the availability of such systems is a prerequisite for the functioning of all higher education institutions.

The analysis of parameters and configurations of internal quality assurance systems of domestic higher education institutions (hereinafter referred to as IQAS) was carried out on the basis of data obtained during the survey “Internal Quality Assurance Systems in Domestic Higher Education Institutions” arranged by the National Agency for Higher Education Quality Assurance in November 2019 for all higher education institutions. The information obtained from 183 questionnaires filled-in by Ukraine’s universities has become an invaluable source of information about the development of local quality assurance systems in the domestic system of higher education.

According to the survey, 68% of institutions have declared the existence of an internal quality assurance system, and the rest (32%) – the presence of its separate components (no institution has admitted that it does not have any quality assurance tools) (see Fig. 34). However, such a high rate is still not an evidence of the large-scale implementation of quality management in Ukrainian universities: as shown by the analysis of the answers to other questions in the questionnaire, some institutions equate the introduction of IQAS with the adoption of various internal documents (provisions on quality assurance) and / or the creation of certain special subdivisions.

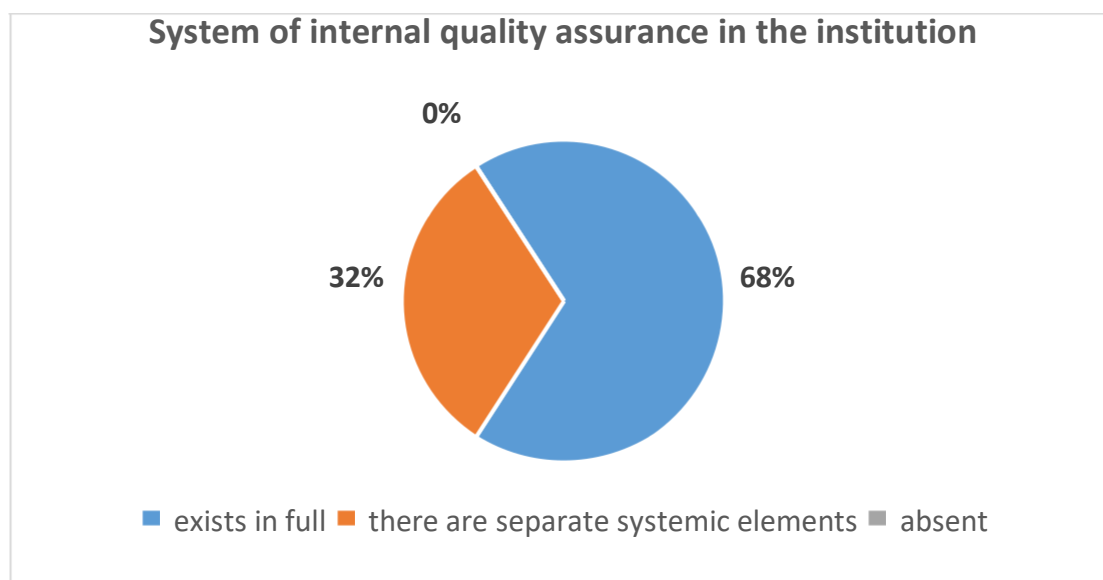


Fig. 34

The processes of creating and implementing internal quality assurance systems began mainly after the adoption of the new Law of Ukraine "On Higher Education" in 2014: 70% of institutions noted in the questionnaire that work with the implementation of the internal quality assurance system of education began in 2014 or in the following years (54.6% - in 2014-2016). This confirms the traditional practice in Ukrainian higher education, when innovations are introduced in educational institutions only as a result of legal requirements and directives from the Ministry of Education. Alongside this, it should be noted that several institutions reported that the expansion of the system started from the moment of the foundation of the institution. This indicates that the university management is aware of the fact that quality assurance processes are an essential component of the functioning of an educational institution, and not a managerial "whim".

All institutions indicated that they have internal documents that regulate quality management processes; 80% of these institutions mentioned an integrated (systemic) document that describes the structure of the quality assurance system, its objectives and specific tasks, forms of quality control, persons responsible for this control, measures that are taken based on the results of control etc.; 20% of institutions mentioned a set of documents that regulate separate elements of quality assurance.

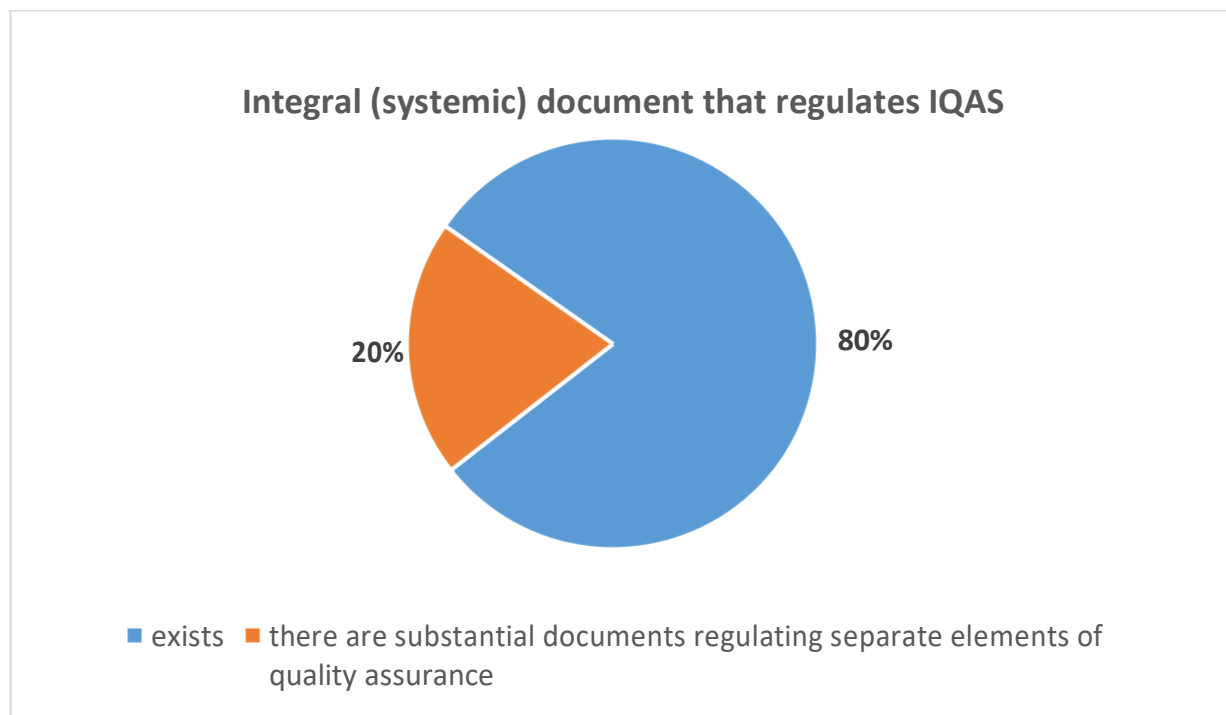


Fig. 35

The correlation between responses to these two questions are of particular interest: 60.7% of the institutions declared the existence of both full internal quality assurance systems, and comprehensive documents regulating its function; 7,7% reported the presence of both system and documents concerning quality assurance; 19,1 % - both the availability of individual elements of the system and an integrated document; 12,6 % - both availability of individual elements of the system and integrated separate documents for quality assurance.

Table 14

***Presence of IQAS vs presence of an integral document,
regulating the processes of quality control***

	there is a single document	there are separate documents
there is a system	60,7 %	7,7 %
there are separate elements of the system	19,1 %	12,6 %

Thus, there is a quite strong link between the presence of an internal quality assurance system and an integrated document: for example, 88.8 % of institutions that have a system indicate the presence of an integrated document, while among institutions that have specified only certain separate elements of the system, 60.3% have an integrated document. This is also true in the "reverse direction": among all the higher education institutions that have an integrated quality assurance document, a single internal system is deployed in 74 %, while among those who have just certain documents, the majority (62,2 %) are those institutions that have only separate element of IQAS.

The main components of the system (ensuring the quality of educational programmes, the quality of teaching and evaluation, the quality of training results, and the quality of papers of applicants for higher education) are employed systematically in most institutions (> 90%) (see Fig. 36). At the same time, there are five institutions that have declared the existence of a full system of internal quality assurance; these five institutions are among those that have noted that certain elements of the IQAS are not used systematically. This obviously contradicts the very idea of a system in which quality control and improvement processes must be conducted continuously.

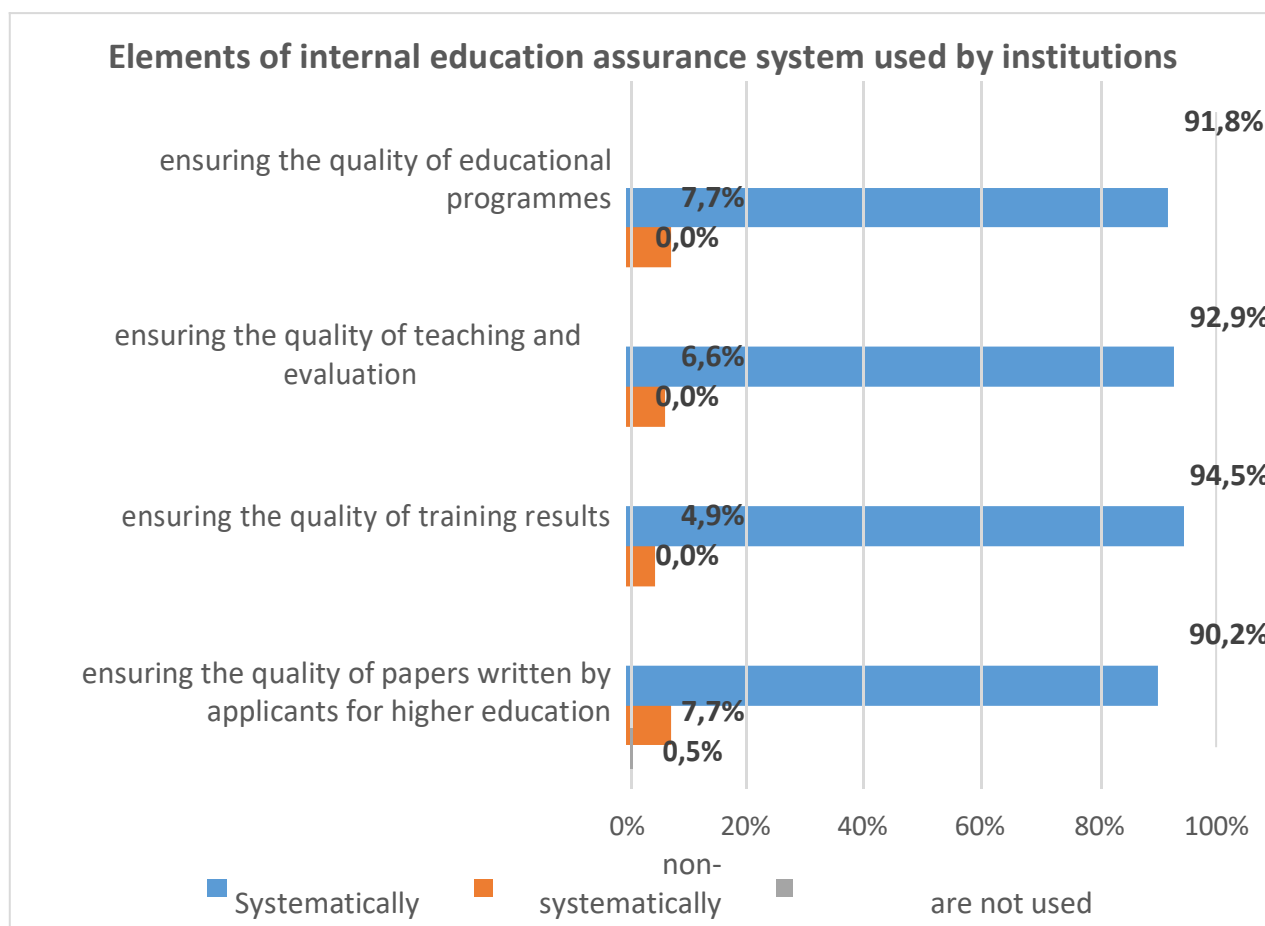


Fig. 36

The key problems identified by higher education institutions that arise when implementing the system of internal system of education quality assurance and / or its separate elements are of interest. The problem of permanent changes in the higher education system, regulatory documents etc.” took the first place with a significant “gap” from other problems — it was indicated by three-quarters of institutions; the vast majority noted the problem of lack of methodological materials for the implementation of such system.

about a third of institutions chose problems such as lack of financial resources, human resources, lack of clear instructions from the Ministry of Education and Science, and low motivation of research and teaching staff (see Fig. 37).

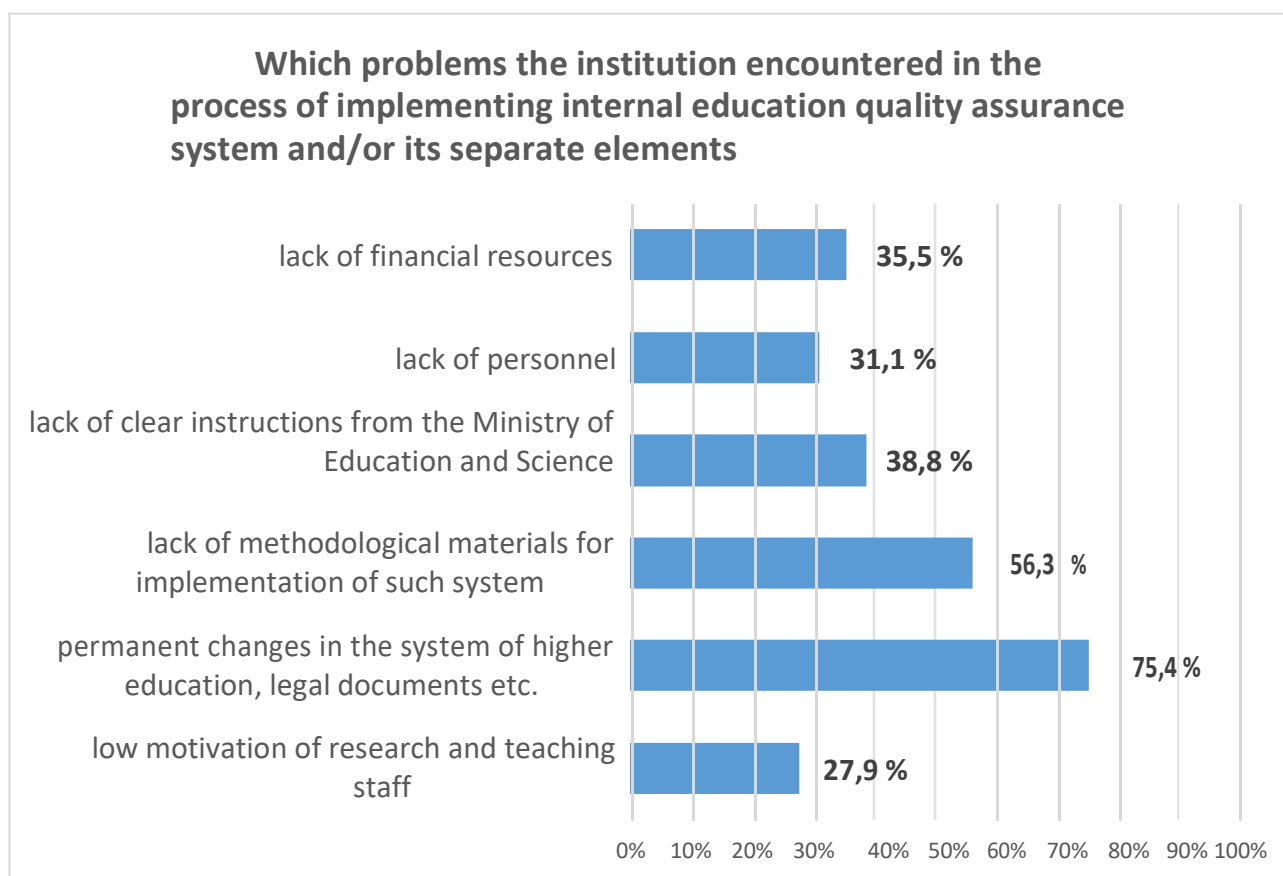


Fig. 37

Coordination of the internal quality assurance system at the university level in more than half of the institutions is conducted by the Pro-Vice-Chancellor for Academic Affairs (56.3 %), in a quarter – by the Vice-Chancellor (27.9%) or an individual person responsible for the quality of education (25.1%). Another 29.5% offered their own version, of which the most popular answers were “First Pro-Vice-Chancellor” and “Deans” (see Fig. 38)

Which person coordinated the work of system of internal education quality assurance

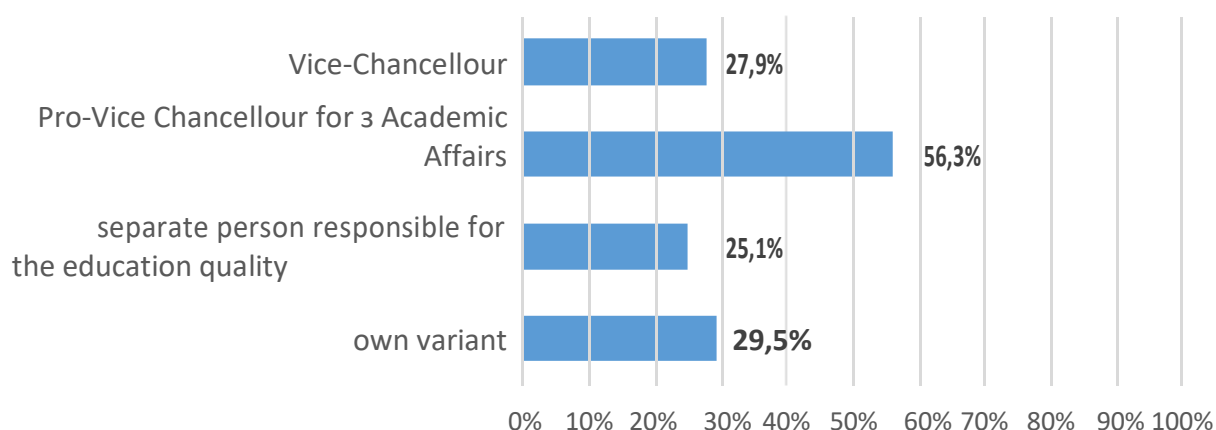


Fig. 38⁹¹

The primary mechanism for ensuring organisational coordination of the internal quality assurance system is the creation of a special unit for these purposes (50.3 %), and the transfer of the corresponding functions to the Training and Methodological Department (30.1 %) (Fig. 39).

How the coordination of work of the internal quality assurance system is organisationally ensured

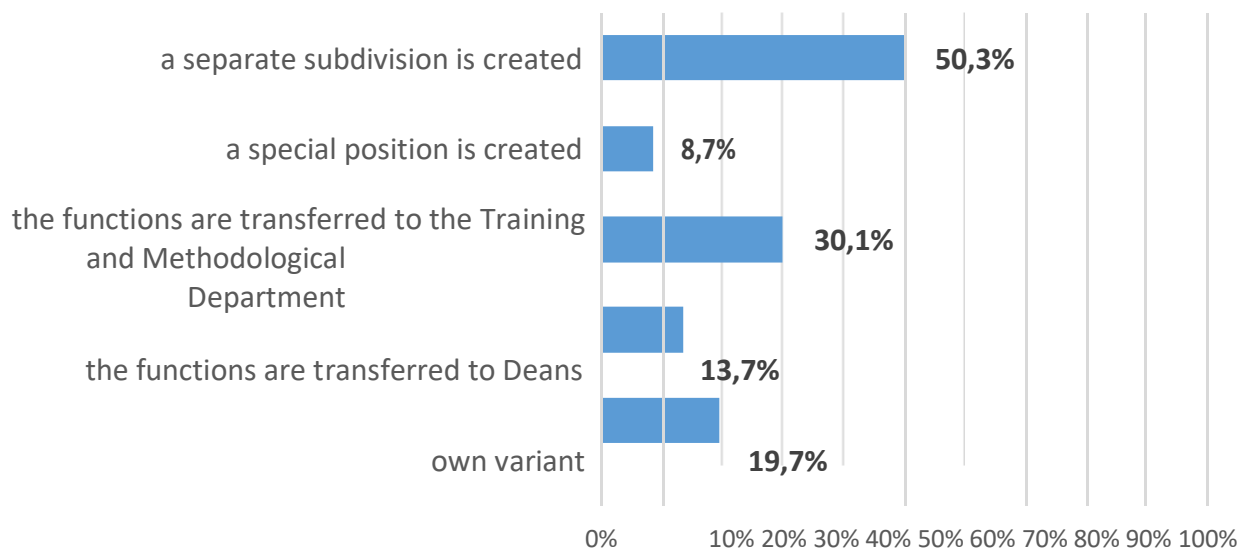


Fig. 39⁹²

An important source of information about the characteristics of educational quality assurance practices in domestic universities were the answers to questions about the instruments that are used to assess the quality of individual elements of the educational process, and the activities that are carried out in the institution based on the results of the quality assessment (Fig. 40).

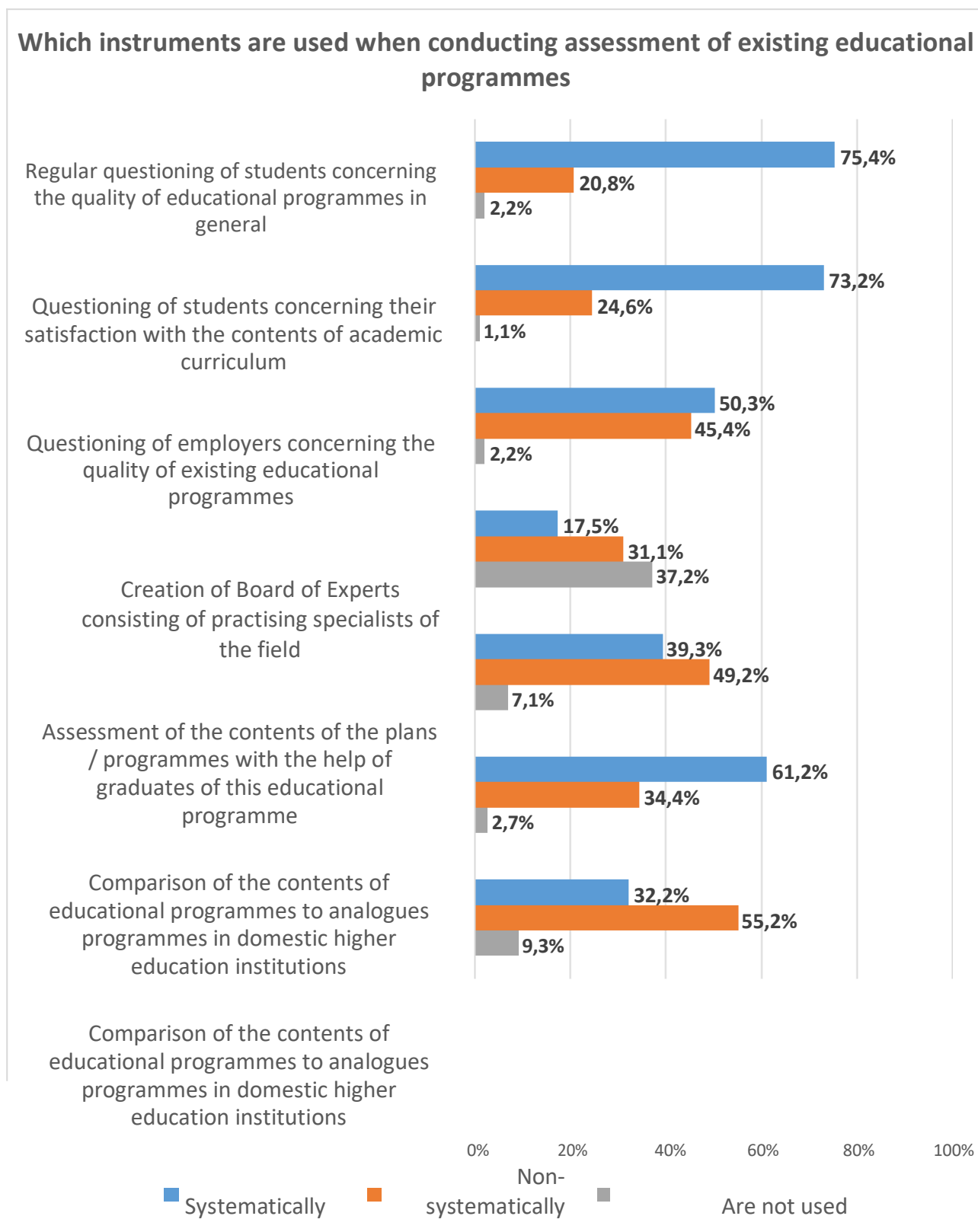


Fig. 40⁹³

Thus, among the instruments that are used in assessing the quality of educational programmes (see Fig. 40), the most popular are the regular questioning of students on the quality of educational programs in general and the questioning of students on their level of satisfaction with the contents of academic curriculum - they are systematically used by 75.4 % and 73.2 % of institutions accordingly and non-systematically - by 20.8% and 24.6% of institutions. It is surprising that 2.2 % and 1.1 % of establishments do not do this at all — unwillingness to receive feedback from a key stakeholder cannot be considered a good practice. A popular instrument is comparison of the contents of educational programmes to similar programmes in domestic higher education institutions; this tool is systematically used by 61.2 % of institutions, and non-systematically - by 34.4 %. Quite high indicators of using the tool “Comparison of the contents of educational programmes to similar programs in domestic higher education institutions” can be also considered a positive trend, which probably indicates a gradual transition from locality and orientation to certain leading domestic institutions, and the introduction / adaptation of interesting foreign practices. The level of involvement of graduates in assessing the quality of the educational programme contents turned out to be high; those are the individuals who can give a fairly objective assessment of the relevance of the program to the requirements of the labour market. A similar role is played by the questioning of employers, which is also carried out by the vast majority of institutions. The tool “Creating the Board of Experts consisting of practicing specialists of this field” was the least popular.

The most common activity is carried out based on the results of an assessment of the quality of educational programmes (see Fig. 41), which is a "Review of the content of existing disciplines" – it is systematically carried out by 90.2 % of institutions, and the rest of institutions do it unsystematically. There is also an active change in the nomenclature of academic disciplines the implementation of new disciplines (compulsory and based on free choice of a student) and the removal of those that were unnecessary within the framework of this educational programme.

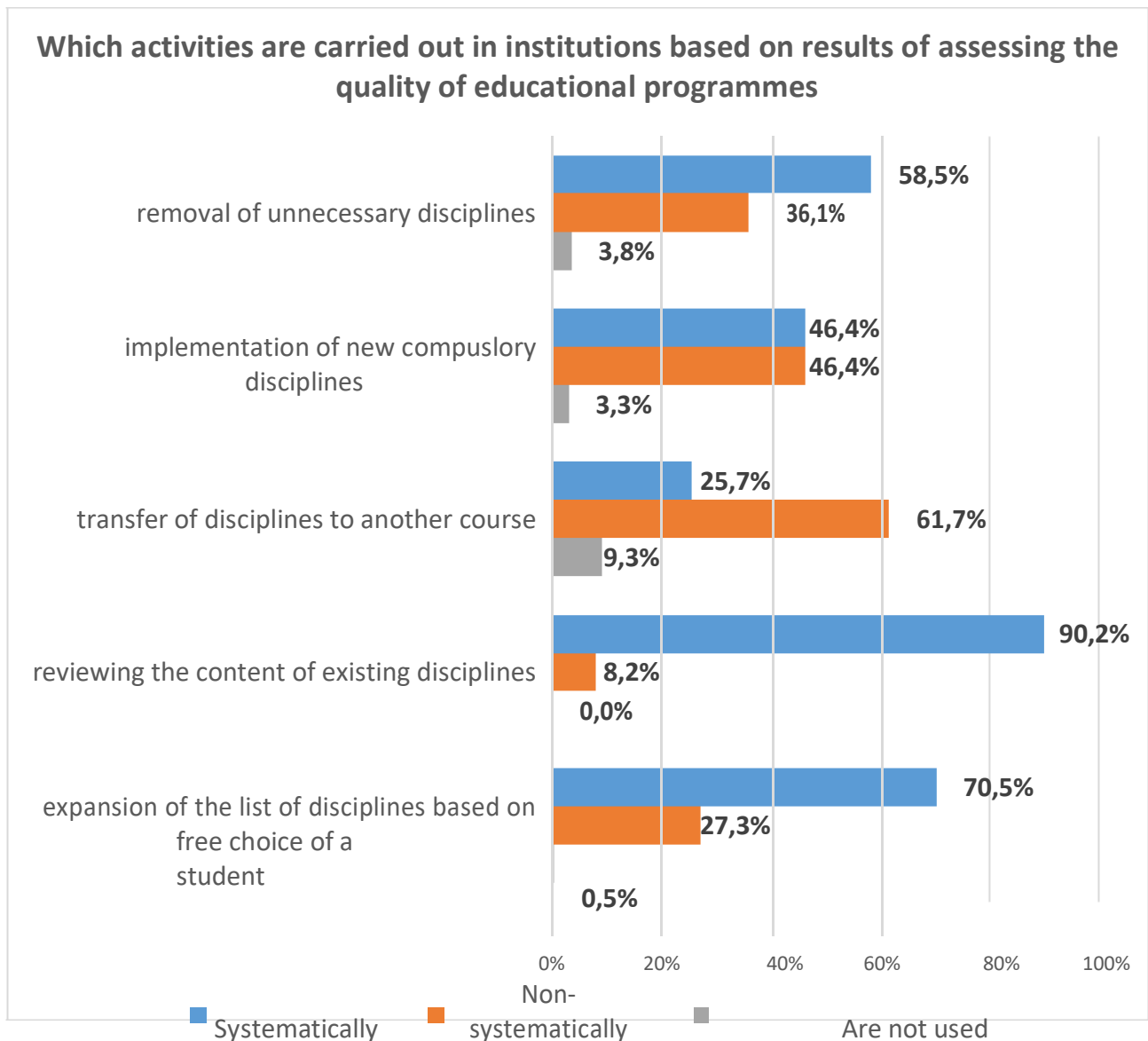
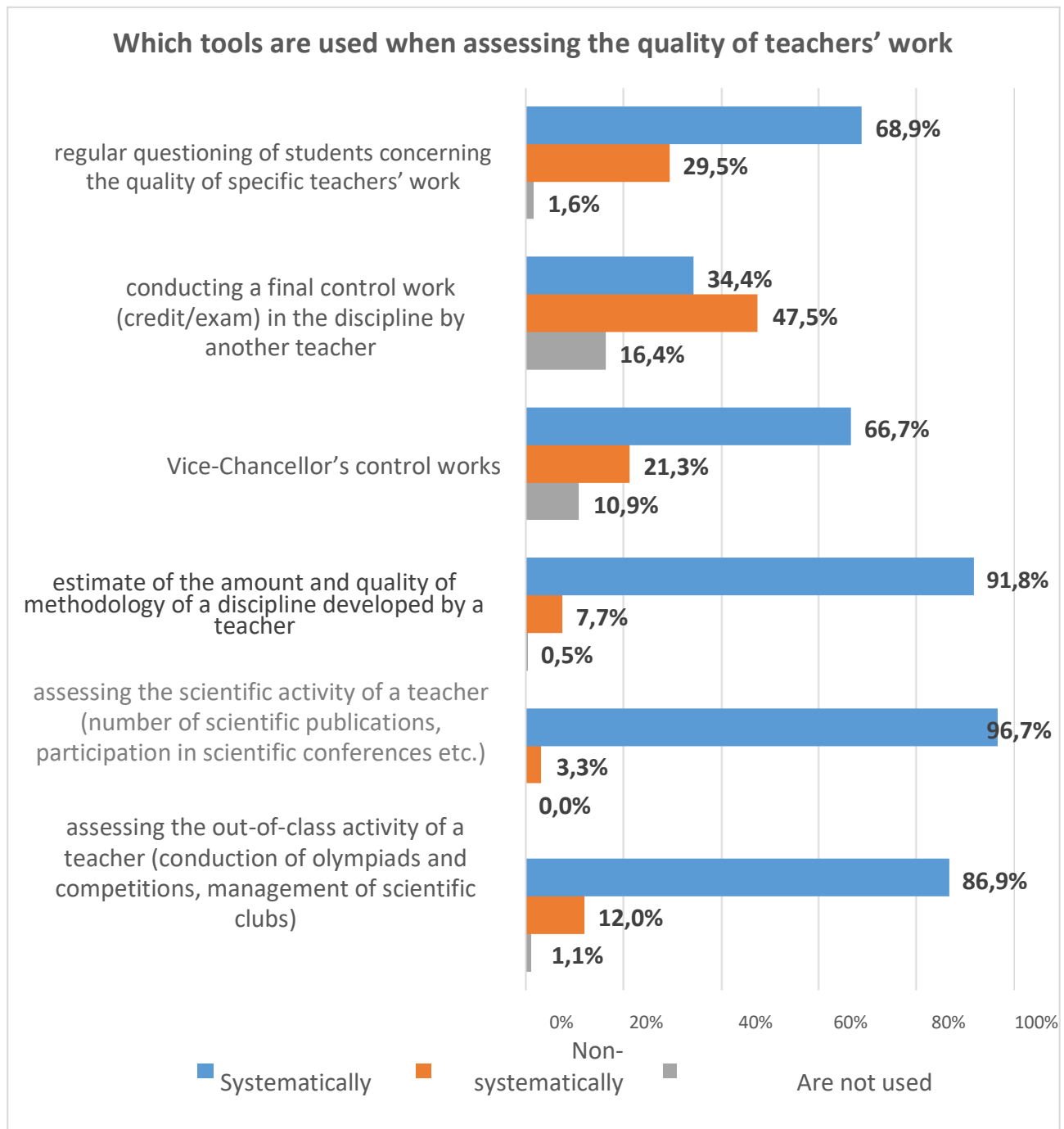


Fig. 41

The next investigated element of the internal quality assurance system was the quality of teachers' work. Among the tools used during the evaluation, the most required were those that estimate of the quality of teaching methodology used within a subject discipline as developed by a teacher, evaluation of the research activity of the teacher and his/her out-of-class activity, which is generally consistent with the current practices of formal evaluation of "achievements" of research and teaching staff. Although the vast majority of institutions ask students about the quality of teachers' work, only two-thirds do this systematically. It is still popular to conduct Vice-Chancellor's control tests, although almost 11 % of institutions have left this practice. Such a specific tool as conducting final control by another teacher, which could serve as a means of independent evaluation, is the least common: 34.4% of institutions use it systematically,

47.5% do not use it systematically, and 16.4% do not use it at all (see Fig. 42). Here we shall note that such low numbers may be due to the fact that there could be only one specialist in some (if not most) disciplines in a small higher education institution.



According to the results of the evaluation of the quality of teaching, all institutions practice such an activity as “Individual conversation of the department head with the teacher”, almost all institutions oblige the teacher to take qualification courses, trainings, etc. and also award the best teachers. The formation and publication of teacher ratings is popular, although 15.8 % of institutions do not do this at all. However, the differentiation of wages depending on the results of the evaluation is not very spread, which is most likely due to the complexity of its implementation in public institutions due to the current wage system (Fig. 43).

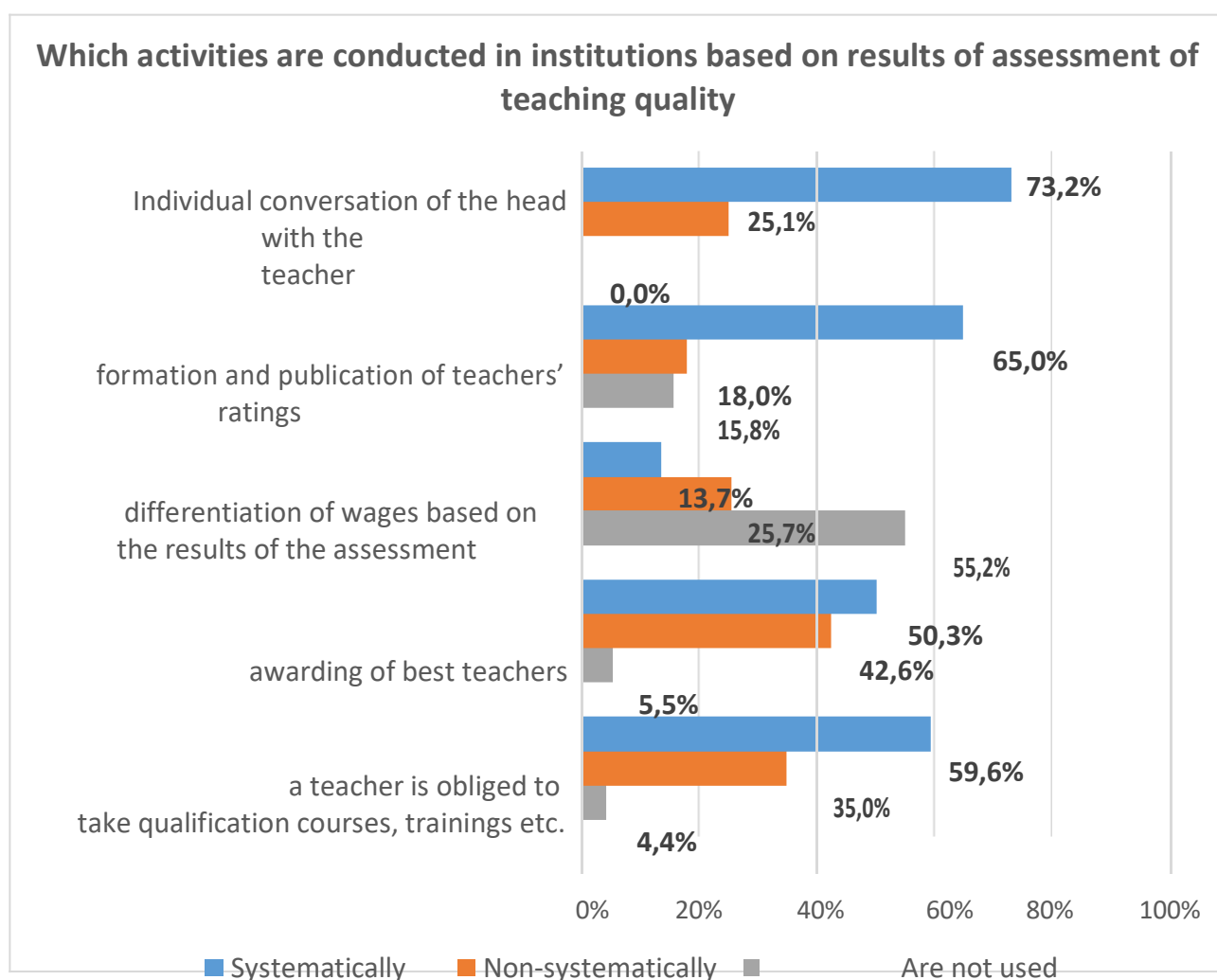
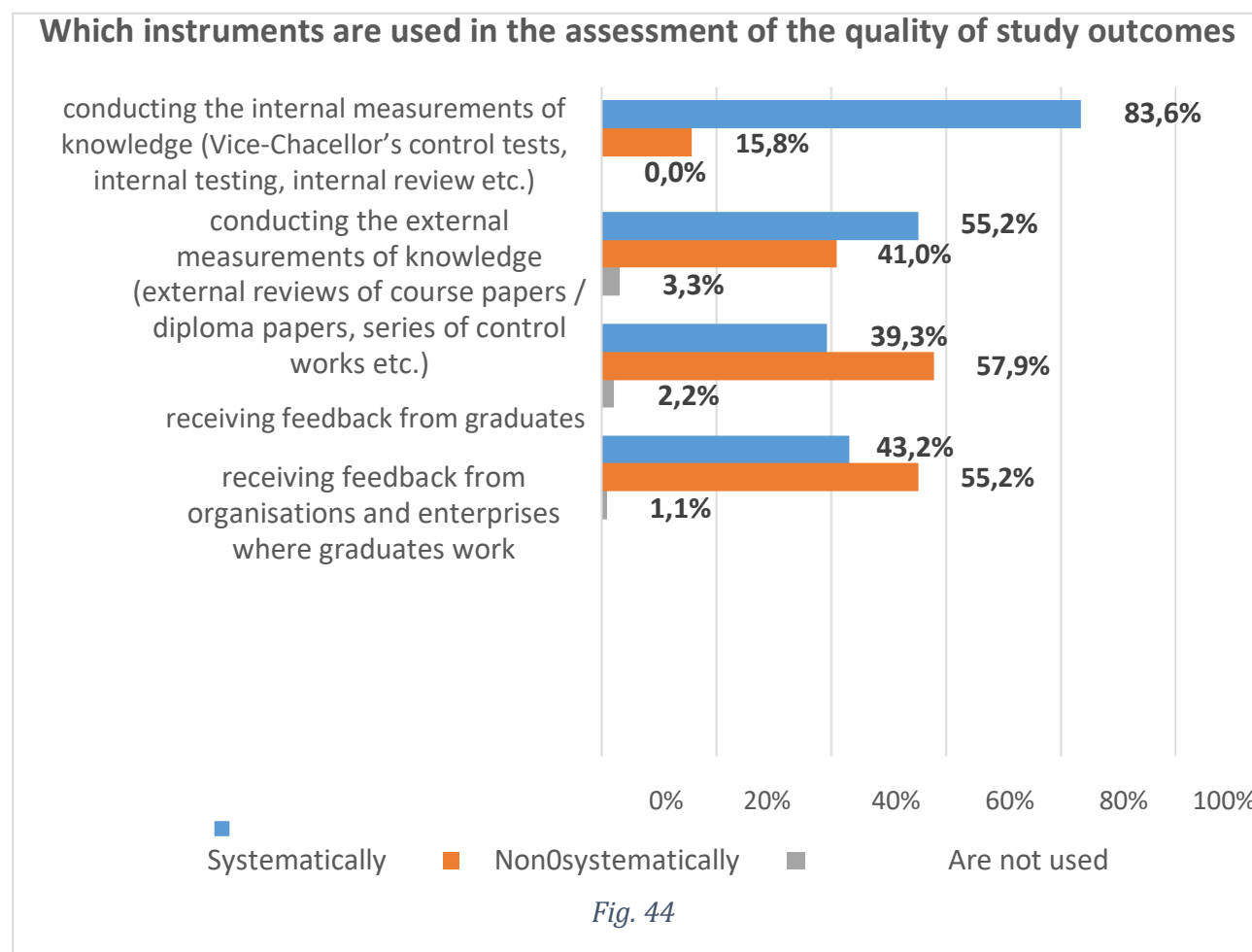


Fig. 43

Among the tools that are used to assess the quality of study outcomes, the traditional internal measurement of knowledge (Vice-Chancellor's control tests, internal testing, internal review etc.) is predictably the most common – it is practiced by all institutions that participated in the survey. Furthermore, almost all of the higher education institutions practiced conducting external measurements of knowledge (external review of course / diploma papers, series of control works etc.). However, only a little more than half of them do it systematically. Almost all higher education institutions implement feedback from graduates and organisations and enterprises

where graduates work, but less than half of them – regularly (39.3 % and 43.2 % accordingly). The latter obviously indicates a lack of proactive position of a significant part of institutions in obtaining objective information about the quality of higher education (see Fig. 44).

As to the activities implemented in higher education institutions based on the results of evaluation of quality of study outcomes, it is logical that the most popular activity was the review of staff providing teaching in this educational programme – it is systematically practiced by 70.5% of institutions, and other 26.2 % - non-systematically. It is also worth noting that for the vast majority of institutions, poor results of quality assessment of study outcomes serve as indicator for reconsidering the appropriateness of the educational programme; this may mean an increase in responsibility of educational institutions that are ready to put the question of closing the programme in cases where it is impossible to implement it at the appropriate level instead of maintaining it “until the last student”. The relatively low indicators for the implementation of such an event as the replacement of the guarantor (curator) of the educational programme were quite unexpected; most likely, this confirms the fact that in the realities of Ukrainian higher education institutions, the position of the guarantor has remained quite formal, and the relevant persons often simply do not have the proper resources (primarily administrative) to be full actors in the educational process.



Another component of the quality assurance processes that was the focus of the questionnaire was the assessment of the quality of the applicants' work. The collected information about the methods of evaluating various types of work (diploma, course papers, laboratory papers, research reports and articles, etc.)⁹⁴ made it possible to see the most common practices of quality control. In particular, the most “controlled” are master's theses - in most institutions, all the main types of evaluation are applied to them (verification on plagiarism, internal review, external review, public defense / discussion, evaluation by a supervisor / teacher). Bachelor's theses are significantly less controlled — by 5-24% percentage points for different forms of control. Moreover, all the offered forms are actively used by most universities for evaluating scientific (articles, theses) and research papers. In course papers, essays and reports, as well as practical projects, the main tools of evaluation are that by the supervisor and public defense; the only form of control for laboratory work is, in fact, the assessment of the teacher (see Fig. 45).

If you look at the situation through the prism of forms of control, the most commonly used is the assessment of the teacher – 79.2 %⁹⁵ of the total number of students' answers concerning all types of works. Attention is paid not to “one hundred percent” answers concerning, in particular, theses and course papers, because these types of works always have a supervising teacher, whose duties include, among other things, assessing the quality of work, and this is part of his teaching load, and therefore, is paid work.

In terms of “popularity”, public defense / discussion (65.1 % of responses in total) is in the second place. Of course, for some types of work, this form of control is not applicable, but again, it is worth noting that not all institutions implement it for diploma and course papers.

Internal review is practiced in 53.2 % of cases, mainly for diploma and scientific (including research) papers. External review is an even less popular tool (36.5 % of cases), used also mainly for theses and research papers; even for master's theses this figure is only 77 %. Verification on plagiarism, a common problem in Ukrainian higher education, is now implemented in 43.5% of cases, and again mainly for controlling the quality of diploma and research papers.

Which forms of assessment (control) are applied to different types of works

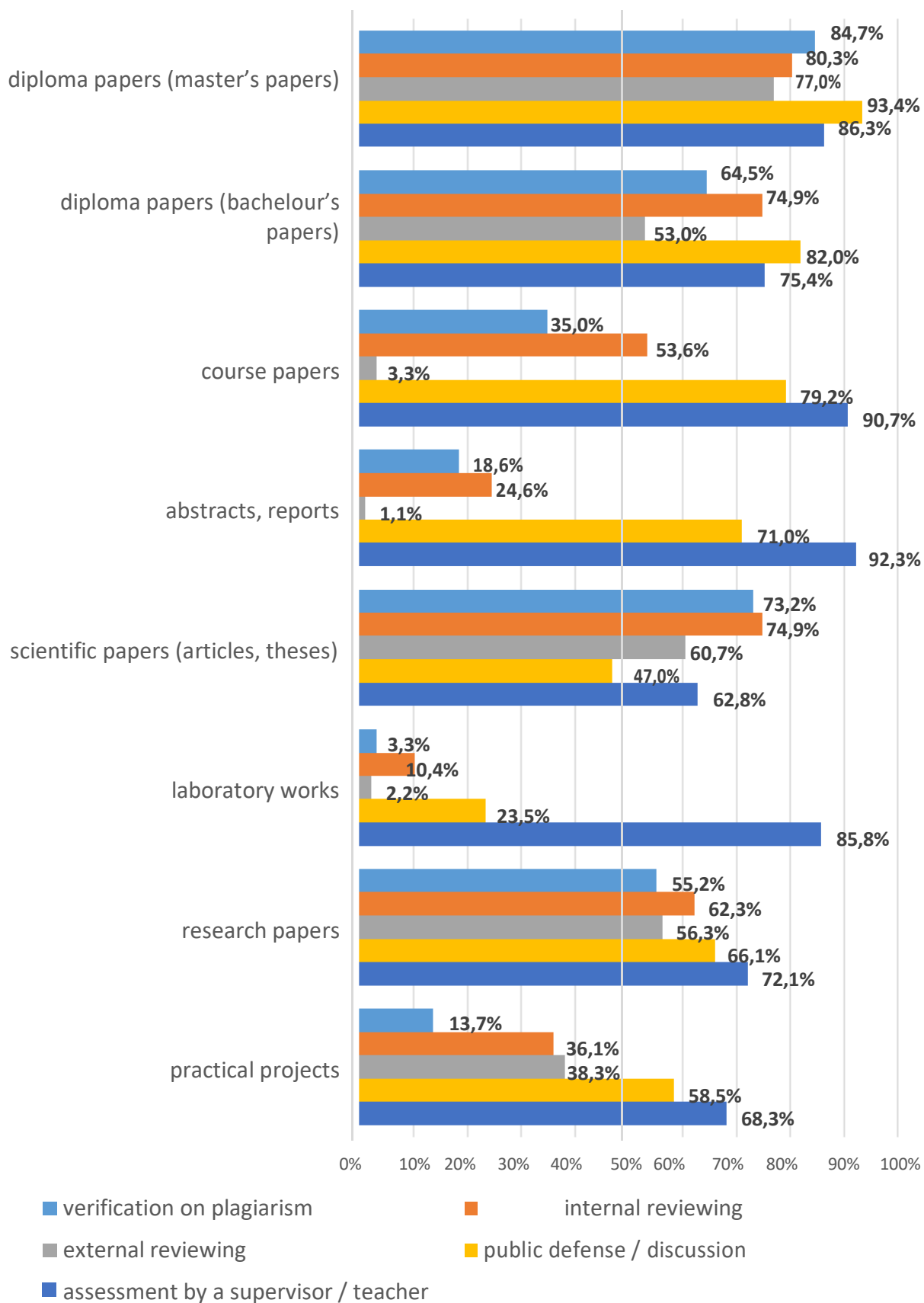


Fig. 45

Another indicator that can confirm the institution's attention to the “quality” of the internal quality assurance system and its development is the certification of this system. 85.8 % of higher education institutions gave an affirmative answer about the presence of activities in this direction (interestingly, this figure is significantly higher than the share of institutions that declared the presence of a quality assurance system (32 %)). In this group of institutions, 32% have already received a certificate, 1% is in the process of certification, and 67% are preparing for it (Fig. 46). As for the latter, the process of “training” is a very vague concept, so it is difficult to say that all these institutions are really actively engaged in certification.

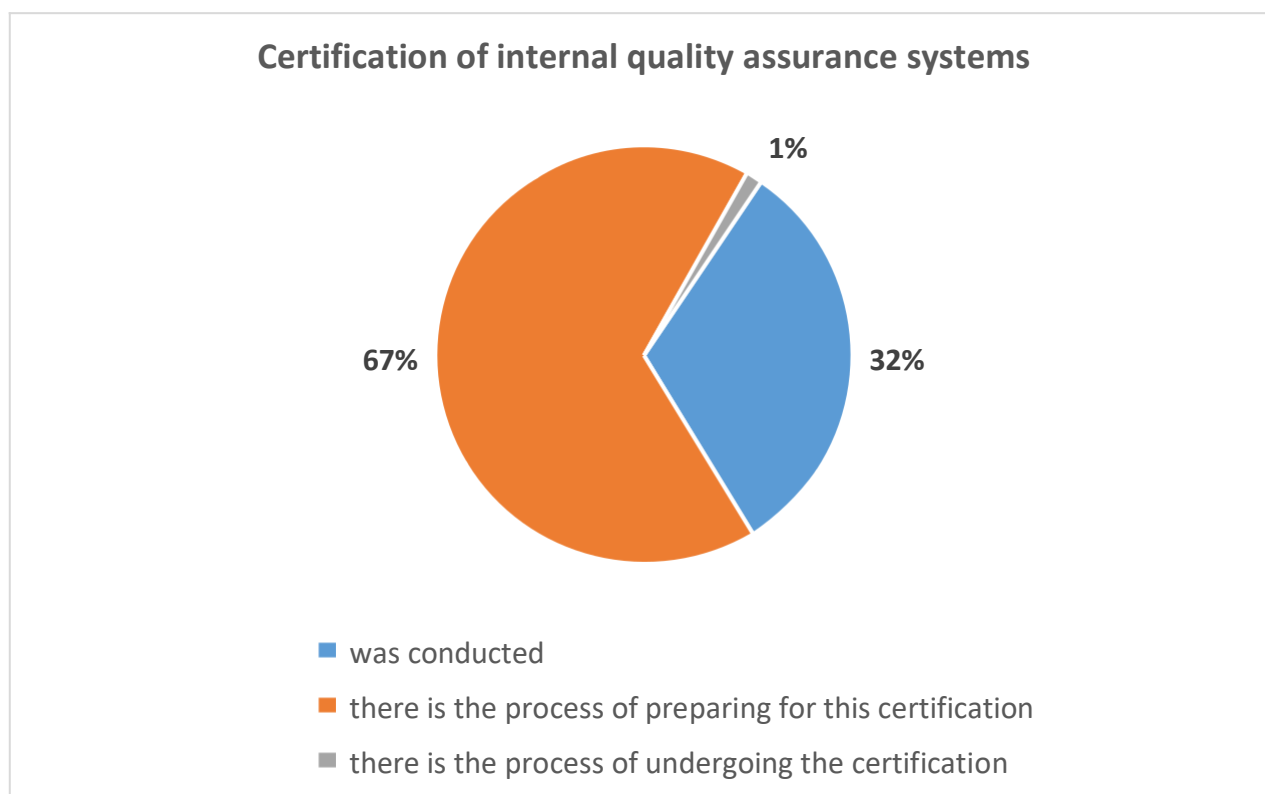


Fig. 46

2.2. Recommendations of the National Agency for Higher Education Quality Assurance on the Implementation of the internal quality assurance system

The internal (intra-university) system of ensuring the quality of higher education aims to create an algorithm for continuous institutional attention to the quality of education, including the revision and improvement of training courses and educational programmes.

1. *The importance of internal quality assurance for accreditation of educational programmes and institutional accreditation.* Internal quality assurance refers to elements of institutional accreditation which are also partially present in accreditation of educational programmes. This system is of particular importance for ensuring the competitiveness of a modern university, since the higher education institution must itself develop its own quality based on the principles of autonomy, self-government and self-regulation.

The implementation of an internal quality assurance system must be based on the unique internal culture of the university, its mission, traditions, appropriate quality policy, mutual respect and trust among all members of the university community. Therefore, such systems may be different in different higher education institutions.

For the development of internal regulatory documents, "Standards and Guidelines for Quality Assurance in the European Higher Education Area"⁹⁶; "Guidelines for Enhancing the Quality of Higher Education in Ukraine"⁹⁷, developed by Czech experts, are recommended for consideration.

2. *Internal quality assurance centre (a conditional name).* A special subdivision responsible for the entire system of ensuring the quality of education can be created at the university. It is important to understand that it performs service functions, not control functions. The internal quality assurance centre moderates all the necessary processes, collects information, and prepares recommendations for making the necessary decisions at all levels of management of the quality management system.

Recommended for consideration: «Model Regulations on the Quality Assurance Centre»⁹⁸ within the project "New Justice"; "Regulations on the Quality Assurance Centre of the National University of Kyiv-Mohyla Academy " ⁹⁹.

3. *Role and significance of other university subdivisions.* Since quality assurance is a task for the entire university community and all its structural subdivisions, accordingly, teaching staff, applicants for higher education, representatives of the administration and support services – they all share responsibility for the quality of the university within their authority.

Recommended for consideration: "Regulations on Internal Quality Assurance of the National University of Kyiv-Mohyla Academy" ¹⁰⁰.

4. *Documentation and software needed for ensuring the necessary procedures.* Implementation of an internal quality assurance system requires that the Academic

Senate adopts the necessary internal documents, creates own or legally licenses the use of other software instruments. The ultimate goal of all internal quality assurance processes is to review (if necessary) and improve training courses and educational programmes. These processes should take place with the participation of teachers, applicants for higher education and employers.

Recommended for consideration: "Regulations on Internal Quality Assurance of the National University of Kyiv-Mohyla Academy" ¹⁰¹.

5. Regular online surveys of students. Held before each examination session and then discussed at the meetings of the Department, the Academic Council, and other university structures with the involvement of employers, representatives of student government and just interested students. In order to organise regular online surveys of students it is important that they feel that their opinion is taken into account and that survey results affect the development of the university.

The purpose of such surveys is to spread positive practices and eliminate negative teaching practices, to study the dynamics of the quality of training courses and the quality of teaching. It is also important that teachers themselves encourage their students to participate in online courses. To do this, during the last class before the exams, approximately 20 minutes can be devoted to registration in the system and answers to the questionnaire questions. The questionnaire must contain both open and closed questions.

In case of impossibility of the arrangement of the online students' surveys paper questionnaires can be used at the beginning.

The national Agency for Higher Education Quality Assurance will provide equal opportunities for conducting online surveys for all domestic higher education institutions.

6. Survey of graduates and employers. It is held once every few years. The questionnaire should include open questions that allow us to understand the main tasks of the higher education institution in preparing students for the labour market. The so-called social skills (soft skills) are of particular importance – they often enable graduates to build successful careers. To create appropriate courses, design certificate programmes and/or attach relevant skills to educational programmes. It is recommended to involve graduates and employers into this design process.

7. Ensuring academic integrity. This is the basis for the development of the reputational capital of the higher education institution. It refers to all members of the university community. To do this, it is necessary to develop a culture of integrity, popularise information about integrity in various forms in the higher education system, use professional anti-plagiarism software, and adopt appropriate internal documents regulating the necessary procedures and responsibilities of various university subdivisions. A variety of online courses can be used (for example: "Academic Integrity at the University"¹⁰²), to organise events and found traditions related to their own unique internal culture.

8. Professional development of teachers. In the context of implementing an internal quality assurance system, this point applies primarily to improving teaching

skills. Professional development of teachers is an institutional duty. It can be arranged both by the higher education institution itself, and in cooperation with other institutions, professional domestic and international partners. The corresponding professional development programmes are approved the Academic Councils of the higher education institution with issuing certificates.

Recommended for consideration: "Educational programme for Professional Development of Teachers of the National University of Kyiv-Mohyla Academy".

9. *Leadership*. It is of key importance for the functioning of the internal quality assurance system. It means initiative, responsibility, mutual demands, and the ability to make the necessary decisions at all levels of the management of the higher education institution.

Part 3

EXTERNAL ASSURANCE OF HIGHER EDUCATION QUALITY AS AN ESSENTIAL FACTOR FOR ASSURANCE OF SUSTAINABLE INNOVATIONAL SOCIAL DEVELOPMENT

3.1. Launch and Performance of the National Agency for Higher Education Quality Assurance

Higher education quality assurance is a requirement of our time, a key principle of the Bologna declaration, and an unquestionable priority for both the academic community and for government policymakers of European countries and other developing world countries. Unfortunately, Ukraine is not a leader in the field of higher education quality assurance: degradation in some higher education institutions, manifestations of academic dishonesty, provision of low-quality higher education, lack of cooperation and trust among stakeholders – all this is being observed in the country. The National Agency for Higher Education Quality Assurance has been tasked to change the situation.

As a permanent collegial body that operates with the purpose of realizing governmental policy in the field of higher education quality assurance, the National Agency for Higher Education Quality Assurance was founded according to the Resolution of the Cabinet of Ministers of Ukraine no. 244 of 15 April 2015¹⁰⁴.

The authority of the National Agency includes:

- establishing the requirements for the system of higher education quality assurance, developing and implementing regulations for the accreditation of educational programmes;
- developing procedures for institutional accreditation of higher education institutions; analyzing their educational performance;
- establishing Sectoral Expert Councils;
- formulating proposals for changes to the list of study fields in which students are enrolled for studies at all levels of higher education;
- approving standards of educational activity and higher education standards for every field of study;
- establishing a single data base of specialisations implemented by higher education institutions;
- promulgating decisions on accreditation or refusal of accreditation of educational programmes based on the results of expert evaluations of educational programmes;
- promulgating decisions to accredit educational programmes in accordance with the written applications of higher education institutions that have the relevant certificates of institutional accreditation;

promulgating decisions on institutional accreditation or refusal of institutional accreditation of relevant higher education institutions;
cancelling the decisions of specialized academic councils to confer a research degree (in cases where violations of academic integrity have been established);
formation of criteria for the assessment of quality of educational performance;
submitting proposals for granting the “national” status to a higher education institution;
establishing the accordance of a “national” higher education institution activity to the criteria for confirmation or annulment of such status;
submitting applications for granting the status of “research university” to a higher education institution;
establishing the accordance of the performance of a “research university” higher education institution to the criteria for confirmation or annulment of such status;
developing requirements for the scientific qualifications of persons which are to obtain research degrees;
making a submission of the procedure for conferral of research degrees by specialized academic councils in higher education institutions;
approval of the procedures for recognition of educational qualifications and research degrees obtained in foreign institutions;
developing regulations for accreditation of specialized academic councils;
preparing and promulgating a report on higher education quality in Ukraine, a report on its own activities, submitting proposals for legislative changes related to higher education quality assurance, etc.

The membership of the National Agency is formed with no more than one person from each subject field; it includes three representatives of all-Ukrainian associations of employers’ organisations; two persons from students of the first and second cycle of higher education; no less than one representative from each of the following: the National Academy of Sciences, each of the national sectoral academies of sciences (1 representative from each academy), state, communal and private higher education institutions.

In June 2015 the first members of the Agency were elected. The election results outraged the academic community because of the presence of plagiarism in the research papers of several elected members, and the openly anti-Ukrainian statements of others¹⁰⁵.

The law of Ukraine “On Education”¹⁰⁶ of 5 September 2017 changed the principles according to which the National Agency membership was to be selected, and ceased the authority of its previous members. At the meeting on 5 December 2018 of a Competitive Committee consisting of 9 persons (including representatives of European organisations), 22 members of the National Agency were selected; on 27 December 2018 the Cabinet of Ministers of Ukraine has approved the selections.

In January and February 2019, the management of the National Agency was elected by the Agency’s members and approved by the Cabinet of Ministers. Serhiy Kvit was elected the Head of the Agency, Andrii Butenko, Olena Yeremenko, Ivan Nazarov

and Nataliia Stukalo were elected Deputy Heads. As of December 2019, the membership of the National Agency for Higher Education Quality Assurance consisted of the following persons:

1. Nataliia Avsheniuk
2. Viktor Alkema
3. Artem Artiukhov
4. Andrii Butenko
5. Oleksandr Dluhopolskyi
6. Olena Yeremenko
7. Iryna Zolotaryova
8. Serhiy Kvit
9. Olena Kolesnikova
10. Volodymyr Medvediev
11. Bohdan Morklyanyk
12. Ivan Nazarov
13. Ihor Oleksiv
14. Liliya Janse
15. Tetiana Prikhna
16. Lesia Smyrna
17. Nataliia Stukalo
18. Lidiia Fesenko
19. Petro Tsarenko
20. Mykola Tsvilikhovskyi
21. Tetyana Tatarчук

The National Agency is now building up its capacity to realize government policy in the field of higher education, to surmount challenges as they appear, and to become a catalyst of changes in Ukrainian higher education, contributing to the formation of its quality culture. The strategy of the National Agency is a signpost of the changes mentioned above, it determines its mission and values, declares the strategic objectives and directions of their realization.

The mission of the National Agency for Higher Education Quality Assurance¹⁰⁷ is to become a catalyst of positive changes in higher education and to form its quality culture. Its strategic objectives are realised in three main directions.

The first direction is higher education quality assurance:

ensuring the quality of educational programmes through the implementation of an efficient procedure for their accreditation and a rigorous attitude to the procedures of the Agency and performance of higher education institutions;

facilitating the functioning of internal systems of higher education assurance in higher education institutions through the realization of consulting and informational activity and the benchmarking of local quality systems;

development of standards and criteria for higher education quality assurance based on global and national cutting-edge practices.

The second direction of the National Agency operations is connected to the recognition of research results, namely:

formation of a scientific research integrity policy through the implementation of transparent and efficient procedures, intolerance to signs of pseudoscience;

implementation of procedures for attestation of academic personnel that meet the best European standards;

accreditation of specialized academic councils based on a developed regulation, monitoring their performance.

Finally, the third direction is the assurance of systematic influence of the National Agency through:

monitoring and analysis of higher education institutions' performance results through persistent quality assurance, and implementation of accreditation procedures and procedures for the attestation of academic personnel;

facilitating the integration of the Ukrainian higher education system into the global educational and research community, establishing partnerships with foreign agencies for quality assurance, encouraging higher education institutions to further international cooperation, and recognizing educational and research degrees obtained in foreign higher education institutions;

creating conditions for the effective interaction of all stakeholders in the field of higher education quality assurance through mutual respect in relationships that foster confidence and open communication;

stimulating the participation of Ukrainian higher education institutions in international academic rankings through implementation of quality criteria;

implementing the best global practices while respecting national educational traditions;

establishing a positive reputation of the Agency by building the confidence of stakeholders in the education process and increasing their participation in it.

The achievement of the aforementioned objectives is to be realized through the implementation of the values and principles of internal organizational culture by the Agency including partnerships, innovations, responsibility, virtue, transparency, independence, professionalism, severity, trust, respect to everyone's viewpoint, cultivation of spirit of mutual support, sincerity and initiation, formation of institutional and personal reputation.

3.2. Accreditation of Educational Programmes according to “the new rules”

On 1 October 2019, a regular meeting of the National Agency for Higher Education Quality Assurance took place in the building of the National Museum Complex “Sophia of Kyiv” where the Head Serhiy Kvit stated, *“At this meeting we are actually starting a very important process of educational programme accreditation. As of today, we have received 1684 applications from institutions that intend to undergo our new accreditation process, and 387 of them are applications for accreditation of master’s programmes that come to an end in January 2020”*. Nine months of hard work by members of the National Agency and employees of the Secretariat preceded this large-scale process: they had come together frequently for frequent discussions, meetings, fruitful disputes and creative pauses to draft fundamentally new instruments of higher education quality assessment.

The goal of the following account - to describe from inside the process that launched the accreditation of educational programmes in Ukraine according to new rules; to emphasize achievements without too much pathos; to admit mistakes and miscalculations without irony and self-irony (which is something absolutely natural for a newly established institution and newly adopted procedures). And the main goal is to demonstrate the existence of real “chemistry” between the managers of departments, divisions, leading specialists, whose enthusiasm and will to change were quite important factors contributing to the rapidity and success of the launch of Ukraine’s new accreditation process.

In February 2019, the government of Ukraine approved the leadership of the National Agency for Higher Education Quality Assurance - is one of the key management bodies in the higher education system, responsible for such important functions as institutional accreditation and accreditation of educational programmes, as well as for managing the system of granting research degrees. Established by the law of Ukraine “On Higher Education” (adopted 1 July 2014) the Agency is required to conform to the European Standards and Guidelines on higher education quality assurance (ESG-2015)¹⁰⁸.

On 25 February 2019, the meeting of the National Agency for Higher Education Quality Assurance took place, during which the regulation “On Committees” was adopted; this regulation established, among other matters, the rules for the functioning of the Committee on Accreditation of Educational Programmes, independent institutions of quality assessment and institutional accreditation (the Head of the Committee – Bohdan Morklianyk) as parts of the National Agency. Moreover, work on the Regulation “On Accreditation of Educational Programmes” was launched; it was previously planned that this document would be adopted at the end of March. During the same meeting, Mychailo Wynnnyckyj was appointed to the position of Head of the Secretariat of the Agency.

In March of the same year, Yurii Rashkevych who was then Deputy Minister of Education and Science remarked rather skeptically, “It would be good if the National

Agency began operations according to its mandate within *three years*. This year is seemingly to be devoted to development of the structure”¹⁰⁹. For launching the accreditation of educational programmes, the Deputy Minister noted the vital need to create Sectoral Expert Councils in every subject field, select a sufficient number of efficient accreditation experts, ensure their training, develop new methodologies, ensure resources, including human ones, and so on. The present Deputy Minister of Education and Science Yehor Stadnyi who previously headed the analytical centre CEDOS, stated in his comment to “Livyi Bereh” on 6 February 2019 that the National Agency would not cope with its authority¹¹⁰.

However, already on 28 March, draft “Regulations on the Accreditation of Study Programmes in Higher Education” were introduced and discussed during the third meeting of the National Agency. On 12 April 2019, the Ministry of Education and Science published the draft “Regulations on Accreditation of Study Programmes in Higher Education” for public discussion - a document developed by the National Agency to fulfill item 1 of article 18 of the Law of Ukraine “On Higher Education” to regulate quality in all higher education programmes. The Ministry of Education and Science website noted that the Regulations were to establish the basic principles and procedures for educational programme accreditation according to the philosophy of assessment and assurance of higher education quality established by the Law of Ukraine “On Higher Education”.

From 6 to 18 May, comments and suggestions submitted by both individuals and legal entities to the draft “Regulations on Accreditation of Study Programmes in Higher Education”, were processed and discussed by members of the National Agency for Higher Education Quality Assurance together with employees of the Secretariat. In addition to suggestions received through the Ministry of Education and Science, separate suggestions were sent directly to the Agency and others noted during round-table meetings organized to discuss the new concept of accreditation of educational programmes and new systems of internal higher education quality assurance. Among the most important improvements to the draft Regulations originated from Olena Kolesnikova, a member of the National Agency selected according to the employer quota: she insisted that the system of higher education quality assurance would not function fully without the inclusion of employers as stakeholders in developing the “rules”. Undoubtedly, it is in the interest of employers to establish partnerships with higher education institutions. That is why representatives from employers’ associations took a very active part in preparing the draft “Regulations on Accreditation of Study Programmes in Higher Education” that provide for the involvement of labour market experts in realization of educational programmes and ensure that programmes of higher education institutions meet professional standards.

On 21 May, a regular meeting of the National Agency for Higher Education Quality Assurance was held together with the Presidium of the Union of Rectors of Ukraine with the participation of the Deputy Prime Minister of Ukraine for Humanities Policy V. Kyrylenko and the Minister of Education and Science of Ukraine Liliya Hrynevych. The draft “Regulations on Accreditation of Study Programmes in Higher Education” was

discussed and approved. The public was also presented the approved Regulations “On Defining the Criteria for Approval of the List of Foreign Accreditation Agencies or Agencies or Higher Education Quality Assurance that Issue Certificates of Accreditation that are Recognized in Ukraine”. This Document proclaims the Agency’s aspirations to pass the ENQA accreditation procedure in the nearest future and to be included in the list of recognised accreditation Agencies of Europe (EQAR).

Of significant importance to the success of the launch of the accreditation process was the approval of the package of documents necessary for creating the future Sectoral Expert Councils (SEC) which were defined by the Law of Ukraine “On Higher Education” as constitutive bodies of the Agency and whose formation required a competitive selection process. The National Agency saw the main task of these Sectoral Expert Councils (their number was 29 according to the number of approved subject fields) in fostering cooperation at the subject field level between academic communities and stakeholders (employers and students). It was assumed that the main function of the SEC’s would to process accreditation cases and prepare expert reports according to procedures defined by the Regulations on Accreditation of Study Programmes in Higher Education. Apart from that, the SEC would act as “centres of expertise” that could provide the National Agency with expert advice on questions concerning specific subject areas. According to the documents regulating the operations of Sectoral Expert Councils, each SEC is formed of 9-15 members with 1 member representing students as well as 1-2 persons delegated by employers. The exceptions are for the SEC in subject field 04 - Theology and 25 - Military Science, National Security, Security of the State Border.

Along with the competition to the Sectoral Expert Councils, the National Agency for Higher Education Quality Assurance announced the start of the competitive selection process for programme accreditation experts. The aim of this competitive selection was to create a registry of qualified experts that are ready to undertake accreditation site visits to programmes corresponding to their subject areas.

Assessment of a higher education institution’s performance in each of its programmes by an independent on-site expert group became a novelty of the new accreditation process. Accreditation expert groups consist of 3 people: 2 reputable university teachers that have experience teaching in the specific subject area and one reputable representative of students that has study experience in this subject area (including PhD candidates if the programme accreditation relates to the third cycle of higher education). The selection of candidates for accreditation experts involved a number of stages: examination of application forms and documents, phone interview if necessary, training and testing. As part of their jobs as accreditation experts, each expert assesses the self-assessment report relating to the educational programme submitted by the higher education institution, in which the institution demonstrates the compliance of this programme with the criteria laid out in the Regulations on Accreditation of Study Programmes in Higher Education. Then the expert studies the educational activity of the higher education institution related to this programme during the site visit to the institution and prepares an analytical report based on the collected

information. The report necessarily includes suggestions on enhancing the quality of realization of the relevant educational programme.

On 1 July 2019, after more than 100 days from the date of the draft's submission, the Minister of Education and Science Liliya Hrynevych officially approved the Regulations on Accreditation of Study Programmes in Higher Education¹¹¹ - one of the most important documents in the work of the National Agency. It was predicted that from this moment – beginning in 2019 - a new paradigm of quality would be gradually become incorporated into Ukraine's system of higher education with the help of these Regulations and through the first preliminary accreditations of educational programmes. As the Head of the Agency Serhiy Kvit said, "this document represents a completely new philosophy of quality and accreditation – our paradigm is collaboration with universities, we do not control and regulate, we offer to collaborate. The key word is trust: trust between a university and the Agency as well as trust between students and the administration. This is the way to grow healthy competition between universities."

At the press-conference "100 Days of Work of the National Agency: A New Paradigm of Quality" which took place on 3 July, the Minister of Education and Science Liliya Hrynevych stated that "the main task of today is to establish transparent and clear rules on how the Agency will work; particularly this will involve the creation of a large number of legal documents that will determine its future work." The first figures concerning the announced competitive selection of experts were reported during the event: the Secretariat of the National Agency received 3829 application from persons willing to become accreditation experts, 449 of which were from students. Eventually, the plan was to create a pool consisting of 2.5 thousand qualified experts; this was to be the team with which it would be possible to start the implementation of a new paradigm of quality. In addition, almost 1000 applications were received from candidate to SEC's.

Today, there are nearly 16 thousand educational programmes in Ukraine. "We foresee that eventually we will have 3 thousand programmes to be accredited per year. Next year however we will not accredit 3 thousand programmes. A certain transition period has been built-in to this reform. As of today, programmes with valid accreditation certificates issued according to the old-system by the Ministry of Education, remain valid or have already been prolonged for a certain period of time, till 2022-2023. Therefore, we have some time before the National Agency will need to reach its full capacity in terms of accreditation," reported Mychailo Wynnnykyj, the Head of the Secretariat. At the same time, institutions would be requiring accreditation of PhD programmes next year – a new process that had not yet been accomplished in Ukraine.

On 29 August 2019, the National Agency for Higher Education Quality Assurance approved several new essential documents connected with the introduction of the new system of accreditation of educational programmes: “Methodological Recommendations for Experts of the National Agency as to the Application of Criteria for Assessment of Educational Programmes”, the “Self-Assessment Report of the Educational Programme”, “Guidebook on Filling-in the Self-Assessment Report of the Educational Programme (for Higher Education Institutions)” and a Glossary. The same day, the membership of each of the Sectoral Expert Councils was approved.

On 2 September 2019, the National Agency sent letters to the rectors of Ukraine’s higher education institutions concerning the procedure for accreditation of educational programmes during the 2019-2020 academic year. The letters stated that if a higher education institution desired to accredit its educational programme, it was to inform the Agency of this intention in electronic form by 27 September 2019. Based on the received information, a schedule of accreditation was created, including the submission date when the self-assessment reports for each educational programme was expected; all higher education institutions received this schedule starting from 1 October. The schedule of access to electronic forms and the schedule of submission of applications for accreditation as well as all methodological recommendations were published on the website of the National Agency¹¹⁵.

What does the new algorithm for accreditation of educational programmes look like? First of all, the whole process, except for some legal aspects, is entirely electronic. However, it must be admitted that the design of the special electronic system for managing all operations related to accreditation online was largely accomplished “on the fly”, and in the beginning this created an enormous strain on both higher education institutions and on the National Agency.

After the schedule of accreditations is published by the National Agency for Higher Education Quality Assurance, the heads of higher education institutions who plan to accredit their educational programmes in a given academic year receive paper legal and financial documents related to the accreditation of each educational programme. The National Agency should receive a copy of the contract certified by the higher education institution no later than the day of submission of the Self-Assessment Report for accreditation of the educational programme; the date of submission is determined by the schedule of accreditation. The presence of a signed contract is a prerequisite for beginning the accreditation procedure.

According to the published schedule, the Guarantor of the educational programme receives access to the electronic forms required for accreditation - most importantly – the Self-Assessment Report form. The educational programme (approved according to established procedures), the study plan for this programme, reviews and feedback from employers (if relevant) are attached to the application.

On the day the application for accreditation of an educational programme from a higher education institution is expected, an appropriate button that enables to the Guarantor to send the electronic self-assessment report form to the Agency is activated.

The application is considered registered from the moment it is received via the electronic system which assigns it a unique number and forms the accreditation case file automatically. The Department of the Secretariat for Accreditation (headed by Hanna Denyskina) is responsible for accepting applications and self-assessment reports that come from higher education institutions. Then, within 5 working days from the moment the application is registered, the Department of the Secretariat for Experts' Support (headed by Kateryna Kuniyska) arrange the appointment of an expert group that will undertake the site visit, define term of their work including the group's visit date to the relevant higher education institution and the deadline for submission of their expert report. Simultaneously, an employee of the Secretariat of the National Agency who is responsible for preparing methodological recommendations for experts is appointed before the visit to the higher education institution. After this, copies of the experts' appointment order and other documents related to planning the site visit appear in the virtual offices (in the Agency's online platform) of the head of the higher education institution and of the Guarantor of the educational programme. This process is designed so that the Secretariat of the National Agency interacts with higher education institutions *exclusively* in electronic form during the whole of the accreditation process.

A number of information dissemination activities were held in 2019 in conjunction with the implementation of the new processes as the schedule of accreditation of educational programmes was being launched.

Thus, during the spring of 2019, the Department for Experts' Support of Secretariat of the National Agency for Higher Education Institution actively began training potential experts in accreditation processes related to educational programmes. Selected candidates underwent training that consisted of an online course and a two-day face-to-face session. To prepare trainers for the face-to-face sessions, a four-day train-the-trainer session was held on 10-13 September 2019 with the support of British Councils in Ukraine, and with trainers brought-in from the British QAA agency. 38 individuals underwent this training in Kyiv and were able from then on to conduct relevant trainings on behalf of the National Agency as part of its activities to prepare candidates who applied to become experts.

Also in September, regional round-table meetings devoted to the explaining the new programme accreditation procedure took place in Lviv, Chernihiv and Odesa. During these events, members of the National Agency explained the details of the Regulations on Accreditation of Study Programmes in Higher Education, methodological recommendations for experts in accreditation of educational programmes, schedules of accreditation of higher education institutions during the year, criteria for high-quality higher education, etc.

During the week of 25-28 September seven two-day practical sessions with certified trainers were arranged in Kyiv (National University of Kyiv-Mohyla Academy, Borys Hrinchenko Kyiv University), Kharkiv (Kharkiv National University of Construction and Architecture), Odesa (Odesa I. I. Mechnikov National University), Lviv (Ukrainian Catholic University), Chernihiv (Chernihiv National University of Technology) and Dnipro (Dnipro Polytechnic National Technical University). During these first training sessions in September 193 candidates acquired expert status and were officially included in the Agency's register of accreditation experts.

At the end of September, a free-access online training course "Becoming an Expert in Accreditation of Educational Programmes" was launched on the educational platform *Prometheus*¹¹⁶. The course was developed by the National Agency for Higher Education Quality Assurance in the context of its plan to prepare experts in accreditation of educational programmes. Lectors of the course included the Head of the National Agency for Higher Education Quality Assurance Serhiy Kvit, the Head of the Secretariat of the Agency Mychailo Wynnnyckyj, members of the National Agency Olena Yeremenko and Lidiya Fesenko. As part of the online training, future experts gained theoretical knowledge, were acquainted with the new procedure for accreditation of educational programmes and the necessary legal documents. The Agency also propagated the idea that experts are not the only ones who could be interested in the online course, and therefore allowed anyone involved in the process of accreditation to join it: experts of Sectoral Expert Councils, Guarantors of educational programmes, representatives of higher education institutions' administrations, etc. The range of questions outlined in the online course was quite wide. It spanned both global problems of creating a quality culture within the new paradigm of higher education and specific questions referring to the procedure for accreditation and defining the role of experts, Sectoral Expert Councils, higher education institutions, etc.

In October, regional round-table meetings entitled "New Procedures for Accreditation of Educational Programmes"¹¹⁷ and "Collaboration Between the National Agency and Universities as Partnering Organizations"¹¹⁸ took place in Zaporizhzhya National University, Bila Tserkva National Agrarian University, Sumy State University, Kherson State University, Oleksandr Dovzhenko National Pedagogical University, Central Ukrainian National Technical University. There, the Regulations on Accreditation of Educational Programmes, Methodological Recommendations for Experts in Accreditation of Educational Programmes, Guidbook on Filling in the Self-Assessment Report of the Educational Programme (for Higher Education Institutions) were presented and discussed. In each case questions related to the establishment of centres of internal higher education quality assurance in Ukrainian higher education institutions were also touched on. During the same month, 10 more regional training sessions for experts in accreditation of educational programmes were held (Zaporizhzhya National University, Khmelnytskyi National University, National Technical University "Kharkiv Polytechnic Institute", Sumy State University, Kherson State University, Dnipro Polytechnic National Technical University, Bila Tserkva

National Agrarian University, Vinnytsia National Technical University, Kyiv National University of Trade and Economics).

Simultaneously, the Department for SEC Support of Agency Secretariat launched its trainings for members of Sectoral Expert Councils. SEC trainings¹¹⁹ took place in October in Lviv Polytechnic National University, Odesa I. I. Mechnikov National University, Simon Kuznets Kharkiv National University of Economics, Prydniprovsk State Academy of Civil Engineering and Architecture, Taras Shevchenko National University of Kyiv; National Aviation University. A General Meeting of Sectoral Expert Councils in the Kyiv National University of Technologies and Design was held to officially launch the activities of Sectoral Expert Councils; more than 350 experts in 29 study fields assembled at the meeting.¹²⁰

Already from 16 October 2019 one-month access to the electronic system was first provided to several higher education institutions that announced their readiness to accredit educational programmes within so-called preliminary launch (Ukrainian Engineering Pedagogics Academy, Ukrainian Catholic University, National Pedagogical Dragomanov University, Institute of Vocational Education and Training of National Academy of Educational Sciences of Ukraine, National Academy of the National Guard of Ukraine, Petro Mohyla Black Sea National University, H.S. Skovoroda Kharkiv National Pedagogical University, Kharkiv National University of Radio Electronics, National Academy of the State Border Guard Service of Ukraine Named After B. Khmelnytsky). These institutions were the first to test the online platform through which the new accreditation process was to proceed. Logically, both public and private institutions were involved in the preliminary launch - "classic", specialized universities including pedagogical and military higher education institutions, academies, and also research institutions. The first historical order of the National Agency to conduct an accreditation site visit was issued on 23 October 2019 for the educational programme "Management and Business Economics" in the Ukrainian Engineering Pedagogics Academy. This date marks the start of the large-scale process of accreditation of educational programmes.

In general, the Agency planned to oversee 1700 accreditation cases during 2019-2020 (this is about 200 cases per month or 50 cases per week (!). The process includes the analysis of self-assessment reports, an expert visit to a higher education institution, an assessment report by experts, evaluation by a corresponding Sectoral Expert Council, decision of the National Agency. Master's educational programmes were to start the process of accreditation (after preliminary launches had come to an end) because their study term ended in December 2019.

Let's examine some weekly figures in order to understand strains on departments of the Secretariat of the National Agency: in any given week, application documents, test results, and recommendations are processed, leading to the inclusion of about 200 new experts to the registry (as of November 2019, the registry included 600 people – a tiny amount compared to the number of submitted applications from those intending to join the ranks of experts who accredit educational programmes); all experts receive contracts that are to be accepted and registered accordingly; at the same time, 5 trainings in 5 Ukrainian cities are arranged and conducted; 55 (!) orders on the

formation of expert groups for accreditation site visits are processed and published (one order requires between 1 and 8 hours of work by the specialist who coordinates the work of experts). Because the electronic system of accreditation of educational programmes was still 'de facto' in development when launched in 2019, it was often necessary to send information letters manually to all experts to explain their work. This process required a lot of time due to the lack of automation. Another challenge is maintaining constant communication with experts involved in accreditation. Their questions (they come through electronic mail, Facebook messenger, phone calls, letters to other department of the Secretariat, delivery service, etc.) are always a priority because it is important to provide experts with support from the National Agency so that their motivation, confidence and faith will not diminish due to their large workload¹²¹.

At the end of October 2019, analysis of the approved accreditation schedules showed the following situation: more than 340 accreditation cases needed to be examined within a very short period of time – between the beginning of November and the end of December. This turned out to be an enormous strain on the departments of the Secretariat, on experts, on members of the SEC's, and on members of the National Agency because the procedure included firstly the overview of self-assessment reports, then there was a visit of experts to the university and their report, discussion of expert report by members of the SEC, and formation of their own conclusions, and finally – the overview of the case at the meeting of the National Agency. Although the first expertise processes began on time, it was physically impossible to conduct such a large amount of cases in a time period shorter than 2 months. The problem was most acute for the those cases whose materials (applications and self-assessment reports) were scheduled be submitted by the relevant institutions as late as 21 November. The evaluations of the expert reports by the relevant SEC had to appear by mid December 2019 so that the Agency could review them and come to a decision before the end of the year. The situation was exacerbated by the necessity to leave time for state higher education institutions to make payments through the Treasury at the end of the calendar year, etc. After long discussions, an uneasy volitional decision to reschedule the meeting of the Agency to December 23 was made; that decision enabled institutions to pay for accreditation through the Treasury by the end of the year (the date of the final Act of Completed Works had to correspond to the date of the Agency's decision on accreditation or refusal). Having analysed the adopted schedule concerning programmes that could be submitted for the review by SEC and the Agency from December to January (those that provide training till the end of January) the review of these cases at the meeting of SEC was rescheduled to 8-15 January, and the January meeting was scheduled for 28 January 2020. Thus, nearly half of the first 340 cases that were submitted for accreditation were considered at the meeting of the National Agency on 23 December 2019, the second part on 28 January 2020. The main thing is that all accreditation site visits were accomplished by the end of December. The stage of consideration was rescheduled for January 2020 for nearly a half (170) of the cases. Vice-Chancellors of universities were informed about these changes and about the new

procedure for payment in cases where the process of accreditation started in 2019 with decisions coming in the next year.

The National Agency thus reviewed 165 programme accreditation cases during November and December 2019. The results were as follows: 103 programmes received accreditation for 5 years; 2 of these were recognised as “exemplary”; 39 educational programmes received nominal accreditation for 1 year, one programme was not accredited; three educational programmes were returned for a repeat site visit; 19 accreditation cases were sent back to SEC to be reviewed again.

The process of launching a new process of accreditation by the National Agency for Higher Education Quality Assurance took a little more than 10 months. Clearly there were some miscalculations, false starts, and mistakes during this period. But 340 cases are currently in process, 350 experts of SEC’s have already started their work, there is a registry of about 2000 recruited and trained experts ready to be called on for accreditation site visits for accreditation. There are hundreds of signed contracts, 20 arranged and conducted round tables and seminars, dozens of explanatory letters sent. All this is evidence that the National Agency for Higher Education Quality Assurance is moving in the right direction, and that an accreditation process that is new for Ukraine and well-received by the research and educational communities has been launched.

3.3. INTERNATIONALISATION OF HIGHER EDUCATION IN UKRAINE AS ONE OF THE NATIONAL AGENCY’S STRATEGIC OBJECTIVES

One of the strategic objectives of the National Agency for Higher Education Quality Assurance¹²² is the internationalization of higher education in Ukraine in general and the activity of the National Agency in particular.

Compliance with the criteria for assessment of educational programme’s quality with the standards ESG-2015 (European Standards and Guidelines — 2015). The new accreditation procedures introduced in Ukraine in 2019 are a logical and necessary step in the context of the Bologna Process and Ukrainian integration into Europe. Already in 2003 Ministers of education of the countries participating in the Bologna Process declared in the Berlin Communiqué the necessity to develop common agreed standards and guidelines on quality assurance. It was a defining step, from the viewpoint of establishing common values and best practices of higher education quality assurance in order to achieve the objectives of the Bologna Process. The first version of the European standards was adopted in 2005. Ten years later in Yerevan, at the Yerevan Ministerial Conference of 45 countries, new standards were approved that laid the groundwork for reform and an increase in transparency of the systems of quality assurance in all of the countries of the Bologna Process including Ukraine. During the development of the Regulations on Accreditation of Study Programmes in Higher Education and criteria for their assessment the National Agency aimed to ensure complete compliance with the “Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG-2015)”¹²³ that describe in detail the procedures for internal and external quality assurance.

Sub-criterion № 4.5. for assessing quality of the educational programme reads “Training, Teaching and Research are connected with the Internationalization of the Higher Education Institution’s Activities”. A high-quality educational programme should be internationalized through the mobility of teachers and students, effective bilateral agreements with foreign partners, double-diploma programmes, invitations of foreign lectors, etc. Higher education institutions participating in the survey “Systems of Internal Quality Assurance in Domestic Institutions of Higher Education” (November 2019) declared that they have partnership relations and bilateral agreements with a total of 5952 foreign universities. However, in the context of education quality assurance, it is important to analyse not the number of such bilateral memoranda / agreements, but how they are active from the viewpoint of provision of real opportunities for teachers, students, administration for professional growth, enhancement of their educational programmes, ensuring high-quality training of specialists. In accordance with the conducted survey of 183 higher education institutions of Ukraine (see Table 15), the number of foreign teachers in Ukrainian universities is 296. Moreover, as of June 2019, 769 foreign teachers were awarded the title “Honorary Doctor” by Ukrainian universities.

Table 15

Quantitative indicators of internationalisation of higher education in Ukraine according to the results of surveys of 183 higher education institution in December 2019

Number of foreign teachers in Ukrainian higher education institutions as of June 2019	296
Number of foreign students (bachelors) as of June 2019	22351
Number of foreign students (masters) as of June 2019	29142
Number of foreign applicants in 2018/19 academic years	17839
Number of foreign graduates in 2018/19 academic years	7721
Number of foreigners expelled for academic failure in 2018/19 academic years	3230
Number of foreigners that voluntarily left studying in 2018/19 academic years	1820
Number of foreign partnering universities as of June 2019	5952
Number of double-diploma programmes as of June 2019	526
Number of students that made an academic exchange in 2018/19 academic year	7561
Number of Ukrainian teachers of higher education institutions working in foreign universities as of June 2019	650
Number of Ukrainian teachers granted with the title of Honorary Doctor in foreign universities as of June 2019	122
Number of foreign teachers granted with the title of Honorary Doctor in Ukrainian higher education institutions as of June 2019	769
Number of international projects dedicated to higher education quality	463

as of June 2019	
Number of educational programmes in Ukrainian higher education institutions accredited by a foreign agency as of June 2019	62

The National Agency points out that the engagement of foreign lecturers into teaching at educational programmes as a rule facilitates the enhancement of quality of these programmes and implementation of good foreign practice: students have an opportunity to listen to foreign lecturers, and colleagues, to exchange experiences of teaching specific disciplines. The practice when Ukrainian university teachers work in foreign higher education institutions is also positive. According to table 15, 650 teachers of the surveyed universities had an opportunity to teach abroad, and 122 Ukrainians were awarded Honorary Doctorates by foreign universities as of June 2019.

Student mobility is an essential part of the internationalization of any educational programme and can be realized through the participation of students in exchange programmes, double-diploma programmes, international summer / winter schools, conferences, trainings, individual grant programmes, etc. The survey shows that 7561 students from 183 higher education institutions of Ukraine took part in exchange programmes during the 2018-2019 academic year. It is worth mentioning that student and teacher mobility enhances the professional growth of teachers and improves the quality of students' training. We must avoid the practice of imitated mobility, participation in fake conferences and training programmes, publications in low-quality foreign journals ("trash journals").

Development and realisation of joint- or double-diploma (cooperative diploma) programmes as well as programmes in English / programmes in other foreign languages

According to the survey, the number of double-diploma programmes in 183 Ukrainian higher education institutions was 526. These programmes not only enable students to receive two diplomas (Ukrainian and foreign) on completion of their higher education programme, but also ensure benchmarking against analogous foreign programmes and foster the transfer of foreign best practices to domestic higher education institutions. The National Agency supports the development of double-diploma programmes and considers the development of clear and transparent procedures for accreditation of such programmes to be its one of its top-priority tasks. On the one hand, these procedures should simplify external assessment of programmes and encourage higher education institutions to develop such educational programmes, but, on the other hand, they should protect students and society from the proliferation of low-quality, imitated, or fake double-diploma educational programmes.

Recognition of foreign accreditation of Ukrainian educational programmes.

In 2019, the Cabinet of Ministers of Ukraine approved the list of foreign accreditation and higher education quality assurance agencies that issue educational programme accreditation certificates that are to be recognized in Ukraine (Order no. № 554-p of 10 July 2019).¹²⁴ The proliferation of programmes with foreign accreditation will contribute to the formation of a positive image of Ukrainian higher education at the

international level. According to the survey, Ukrainian higher education institutions had 62 educational programmes accredited by foreign agencies as of June 2019. The National Agency has already recognized the accreditation of the PhD programme in “Economics” which was awarded to Simon Kuznets Kharkiv National University of Economics by the French agency “High Council for Evaluation of Research and Higher Education” (*Hcéres*), *France* (protocol of meeting of the National Agency no. 16 of 27 November 2019). More requests from higher education institutions to have their foreign accreditations of educational programmes recognized are currently being reviewed. A page¹²⁵ has been created on the website of the National Agency where self-assessment reports and decisions on accreditations of Ukrainian educational programmes by foreign agencies included into European Quality Assurance Register (EQAR) are published. Such practices are an important part of the process of enhancing quality and internationalization of higher education in Ukraine. The National Agency encourages higher education institutions to share practices and exchange their experience including through usage of the Agency’s web resource.

Cooperation with foreign agencies for quality assurance and other stakeholders. The vast majority of European countries have developed systems of higher education quality assurance and corresponding agencies that operate as independent institutions of external assessment. The experience of such agencies is increasingly important for adaptation in Ukraine. During 2019, representatives of the National Agency held meetings and consultations with representatives of agencies for quality assurance from Latvia, Italy, Germany, Georgia. There is a seminar planned for March 2020 with the management of two Polish quality assurance agencies (The Polish Accreditation Committee and the Center for Research Evaluation). An important role is also given to collaboration with employers as the main stakeholders of high-quality education: the National Agency conducted a series of seminars and signed memoranda of cooperation with the Kharkiv IT cluster and IT Ukraine Association in 2019.

Membership in international organizations. The National Agency has set a goal to become a full member of ENQA (European Network for Quality Assurance) and to enter EQAR (European Quality Assurance Registrar). In November 2019, representatives of the National Agency participated for the first time in the European Quality Assurance Forum (EQAF) - the largest platform in Europe for exchanging experience, establishing contacts, discussing questions concerning higher education quality assurance and other topical problems in the field.

In January 2020, an application for membership of the National Agency in INQAAHE (International Network for Quality Assurance Agencies in Higher Education) was submitted.

International projects and support from international donors. Higher education institutions that participated in the survey stated that 463 projects implemented in these institutions were dedicated to problems of higher education quality assurance,

The National Agency is also actively expanding its network of foreign partners. The National Agency has become a partner of the Erasmus+ project EDUQAS in 2019-2020, and participated as a consortium member in December 2019 in the drafting of ten other Erasmus+ project applications that will be submitted in February 2020. In addition, the National Agency actively collaborates with the National Erasmus+ Office, the British Council in Ukraine, the USAID New Justice Program, the World Bank, the OSCE, the International Education Research Foundation, the International Renaissance Foundation, and other international organisations and institutions.

External assessment and evaluation of processes and procedures of the National Agency. The conduct of an external assessment of documents and procedures by foreign colleagues as well frequent self-assessment, revision of procedures based on experience and feedback from stakeholders are all essential parts of ensuring the effectiveness and transparency of the National Agency's performance. Thus, the draft Procedures for the Annulment of Decisions of Specialized Academic Councils to Confer a Research Degree was developed by the National Agency, translated into English, and then submitted for examination to a well-known American expert in academic integrity, Prof. Leah Wortham, who prepared a report entitled "Enhancing Academic Integrity in Ukrainian Higher Education" based on the results of her analysis of the draft of the Procedure mentioned above. One can be acquainted with her report on the website of the National Agency¹²⁶.

Based on results of the first 300 accreditation cases, surveys of educational programmes Guarantors, experts, members of the Sectoral Expert Councils were conducted to define the range of problematic issues requiring additional attention and possible amendments to relevant procedures. Based on the results of analysis of the surveys, a range of correcting methodological seminars were conducted in all large cities of Ukraine (Kyiv, Dnipro, Kharkiv, Odesa, Lviv), proposals for amendments to the Regulations on Accreditation of Study Programmes in Higher Education as well as other legal documents were made. In addition, a review of the Strategy of the National Agency has been planned for the Spring of 2020 to take into consideration changes and new trends in the development of higher education in Ukraine.

3.4. Performance Results of the National Agency in 2019 with respect to Ensuring Academic Integrity and Ethical Academic Interaction in Higher Education and Research Institutions

Creation of an internal legal framework related to issues of academic integrity and ethical academic interaction

Having approved its Code of Academic Integrity and having signed the Declaration on Adherence to Academic Integrity of a Participant in the Process of Realisation of State Policy in the Field of Education Quality, the National Agency demonstrated by its own example what the first steps towards the formation of a culture of academic integrity and ethical academic interaction in higher education and research institutions should be. Next, sections on academic integrity appeared in the Regulations on Accreditation of Study Programmes in Higher Education and in accompanying documents attached to these Regulations.

Based on the Expert's Code of Honour developed as part of the project entitled "A New System of Accreditation as a Means of Assuring Quality and Overcoming Corruption in Higher Education in Ukraine", the National Agency established new approaches ("good practices") to expert's work during site visit assessments of educational programmes that include the following aspects related to academic integrity:

- in his/her actions, an expert must not lose sight of the main goal of accreditation: to encourage improvement of the educational programme, and not just constitute the presence of standard blocks within educational programmes, or their formal correspondence to quantitative indicators. The expert's behavior should not approximate that of a reviewer or auditor, but rather be that of a facilitator and advisor. The expert must assume that the Guarantor of the programme is interested in its improvement; he/she must foster an atmosphere in which the Guarantor of the programme will not hide its drawbacks and will feel "safe to fail";
- a student-centred approach: the expert represents not only the Agency or the state, but also all stakeholders especially students who are the main "clients" of the higher education institution. Thus, the expert must learn to look at the educational programme not merely from the viewpoint of a teacher, but also from those of employer and student. The expert assessment should be client-oriented. The expert must forget about "professional solidarity" and ask first and foremost questions focused on what is better for the student, not for the teacher. In particular, the expert should focus on enhancing those contemporary elements of programmes that improve the experience of the student and facilitate acquisition

of not just skills in the ordinary meaning of this word (that are currently central elements of programmes: to KNOW and to KNOW HOW TO DO), but in the global meaning of the term – something required by employers;

- “result above process”: in so far as the success of an educational programme is measured by the achieved result (qualified graduates able to solve professional tasks), and not just by the amount of available resources (number of teachers possessing a research degree or academic title, presence of a library, etc.). One of the most difficult tasks of an accreditation site visit is the assessment of correspondence between invested resources and achieved results. Perhaps the only way to verify this is to make sure that indicators of success (KPIs) of the educational programme are established beforehand and registered in the profile. Experts must be knowledgeable in success indicators of analogous programmes (benchmarking) in order to provide accurate assessment;
- accreditation site visits must be evidence-based and therefore demand awareness of the importance of the accuracy of data collection and interpretation. It is important that all data should reflect results and not just the available resources of the educational programme;
- at the same time an expert must be flexible, i.e. take into account the peculiarities of the educational programme, identify the uniqueness of its objectives and tasks and assess it accordingly;
- transparency and collegiality – experts must work openly, cooperate with the Guarantor of the educational programme and other members of the expert commission to achieve results, not just to accredit “on paper”, to prevent outside influence on the accreditation process;
- trust – the expert must not leave room for any suspicion of outside influence on decision-making or employ double standards. To build trust, the expert, for a certain period of time, should become a mentor who supports changes (providing consultations on implementation of changes) in the university. This will build trust and increase collective responsibility for the result of the accreditation exercise.

Development of recommendations on creating an effective system of assuring academic integrity in the activities of higher education and research institutions

On 19 October 2019, the National Agency officially approved the following as constituent elements of its Guide for higher education institutions on developing and implementing university systems for assuring academic integrity:

- a description of the university system for assuring academic integrity;

- code of academic integrity;
- management of the process of adherence to academic integrity at the all-university and local levels;
- definition of the tasks and functions of the group that will facilitate academic integrity;
- Committee on Academic Integrity and Committee on Ethics and Conflict Management;
- accountability for adherence to academic integrity and its violations;
- procedure for reviewing educational, qualification, methodological and research papers for signs of academic plagiarism;
- measures to prevent academic integrity violations in the educational and research activities of the higher education institution;
- compulsory signing by participants of the educational and research processes of a Declaration of Adherence to Academic Integrity.

As part of the Guide, the following elements a university system for assuring academic integrity are offered:

- legal documents that describe at a systemic level the mechanisms of implementing the principles of academic integrity in research and educational processes; measures to ensure adherence to the principles of academic integrity, procedures for preventing and combatting academic integrity violations;
- structural subdivisions and authorized commissions that ensure the popularization of the principles of academic integrity, their implementation into the educational and research activities of the higher education institution, and which also perform an observation and control function;
- informational database with the help of which the principles of academic integrity are popularized and the level of awareness of all participants of educational and research activities in the university are raised regarding issues of academic integrity;
- instruments of implementing the principles of academic integrity in the educational and research activities of the university that perform an enlightening function, and with the help of which it is possible to prevent violations of academic integrity;
- instruments of control of the adherence to academic integrity in the educational and research activities of the higher education institution.

3.5. Drafting a Procedure for the Annulment of Decisions of Specialized Academic Councils to Confer a Research Degree

The draft Procedure for the Annulment of Decisions of Specialized Academic Councils to Confer a Research Degree¹²⁹ implements the main recommendations of The European Code of Conduct for Research Integrity¹³⁰. Specifically, this document requires that:

- investigations are fair, comprehensive and appropriate, with particular attention to accuracy, objectiveness and scrutiny;
- parties participating in the procedure declare any conflicts of interests that may appear during the investigation;
- there are measures for ensuring that investigations are completed;
- the procedures are conducted confidentially in order to protect those who take part in investigations;
- institutions protect the rights of “informants” during the investigation and ensure that their career prospects are not threatened;
- general procedures to counter violations of best practices in research are available in open access to ensure their transparency and equal application;
- investigations are conducted appropriately and justly to all parties;
- persons accused of misconduct (crime) in their research are provided with full information about the accusations and are secured a fair process during which they may provide answers to the accusations and submit relevant evidence;
- sanctions that are proportional to the seriousness of the violation are imposed on persons against whom accusations of misconduct (crime) were proved;
- appropriate reputational recovery measures are conducted when researchers are acquitted of misconduct (a crime);
- anyone accused of misconduct (crime) in research is considered to be innocent until the opposite is proven.

Publication of the draft Procedures triggered significant discussion within the domestic academic community, extensive interest in improving the text of the document, and sometimes even a barrage of baseless criticism and accusations that the Agency seeks to facilitate bogus dissertation defenses and lacks the will to censure plagiarists that defended dissertations in previous years¹³¹.

Leah Wortham noted in her comments on the draft Procedures: “I understand that what to do about past plagiarized dissertations and other research works within the scope of the proposed Procedure is an immediate priority for the Agency. Initial cases

decided with the Procedure likely would have a deterrent effect. It seems though also important for the Agency to have sufficient resources to also focus on “carrots” encouraging that values of academic integrity be integrated in all higher education programs including effective plagiarism education programs. This also might be accompanied by accreditation standards that even might go beyond encouragement to enforcement “sticks” on required minimum types of programs. In my experience, effective academic integrity programs need to “win the hearts and minds” of students, faculty, and staff as to why they are important. The grey areas in plagiarism and data collection and report, though, also require education of where lines are drawn”¹³². In the same document, in Technical Suggestions to the National Agency, Prof. Wortham mentions the following: “I did not see anywhere in the enumerated “offenses” a reference to “ghostwriting” or “contract cheating,” meaning paying someone else to write the submission for you. I did not see anything though that would reach the ghostwriting and contract cheating situations. I realize the proof of that would be somewhat different than that of plagiarism. It seems though that this is a common enough practice that it should be in the ambit of what is covered”.

This comment opens a new front of work for the National Agency in the field of ensuring the recognition of other violations of academic integrity at the legal level and creation of effective mechanisms of combating them.

The main tasks of the National Agency in 2020 in the field of ensuring the adherence to academic integrity and ethical academic interaction in higher education and research institutions should include the following:

- analysis of the current state of academic integrity assurance in higher education and research institutions;
- expansion of the list of academic integrity violations currently included in Article 42 of the Law of Ukraine “On Education”;
- development of a national database of information concerning academic integrity assurance in the educational and research activities of higher education and research institutions, in collaboration with sub-commission №303 “Academic Integrity” of Methodological Committee 15 of the Ministry of Education and Science;
- expansion of the Guidebook for higher education institutions for developing and implementing a university system for assuring academic integrity;
- creation of comprehensive English-language materials on the topic of academic integrity for foreign students of higher education institutions in Ukraine;
- creation of a mass open online course for experts and representatives of SEC on academic integrity during the accreditation of educational programmes and

analysis of an institution's internal system of quality assurance as related to academic integrity (working title: "Effective development of a system of academic integrity in education and research");

- developing a procedure for revealing violations of academic integrity and a procedure for reviewing cases concerning such violations (separately for each group of participants in the educational and research processes: students, teachers, managers);
- translation of the documents of the European Council Platform on Ethics, Transparency and Integrity in Education (ETINED);
- organization of local trainings on how to develop university systems of academic integrity for students, teachers and managers of a higher education institutions;
- realisation of the idea of having cases on plagiarism reviewed by the High Court of Intellectual Property, creation of the legal base for the implementation of such a procedure.

Selected quantitative indicators of NAQA`s activity in 2019

Accreditation and communication

- 370 contracts (more than 120 additional contracts) with HEIs for carrying out accreditation procedures
- 1767 electronic letters of intent to accredit educational programs during the 2019/2020 academic year received from HEIs
- 375 applications for accreditation of educational programmes received
- 375 Guidelines for Experts prepared based on analysis self-assessment reports submitted by HEI educational programmes
- More than 4,000 email exchanges concerning information and advisory support for HEI educational programme Guarantors and experts
- 1127 accreditation materials emailed to representatives of expert groups
- 1 Ukrainian-language and 1 English-language version of the NAQA's website
- 1 online course "Expert on accreditation of educational programmes"
- Over 1260 invitation letters for 26 roundtables, totaling more than 3000 participants
- 3000 - email questions analyzed and systematized from accreditation@naga.gov.ua

Experts

- 84 two-day in-person trainings conducted by 37 certified expert trainers that had been previously trained by the National Agency and the British Council
- 19 330 - approximate number of letters from candidates and experts to the e-mail boxes of the Expert Department
- 393 published orders on appointment of expert groups and changes to them for 374 accreditation site visits
- Number of Applications received from Candidates for Educational Programme Accreditation Experts:

- o 987 – student applicants (including PhD students)
- o 3393 - research and teaching staff
- o 4380 - total applications
- Selected for further training:
 - o 889 – student applicants (including PhD students)
 - o 2822 - research and teaching staff
 - o 3711 - total candidates
- Approved in the register of experts:
 - o 1423 - research and teaching staff
 - o 383 – student applicants (including PhD students)
 - o 1806 – total experts

Table 1

Division of experts by specialities

Specialty	Academics	Student Applicants	Total	
<i>11 - Educational, pedagogical sciences</i>	111	21	132	4%
<i>12 - Preschool education</i>	22	8	30	1%
<i>13 - Primary education</i>	17	12	29	1%
<i>14 - Secondary education (major)</i>	146	11	157	5%
<i>15 - Vocational education (specialization)</i>	59	8	67	2%
<i>16 - Special education</i>	5	1	6	0%
<i>17 - Physical education and sports</i>	22	3	25	1%
<i>21 - Audiovisual Art and Production</i>	1	0	1	0%
<i>22 - Design</i>	12	0	12	0%
<i>23 - Fine arts, decorative arts, restoration</i>	11	2	13	0%
<i>24 - Choreography</i>	3	0	3	0%
<i>25 - Musical art</i>	9	1	10	0%
<i>26 - Performing arts</i>	3	0	3	0%
<i>27 - Museum Studies, Monuments</i>	1	0	1	0%
<i>28 - Management of socio-cultural activities</i>	5	1	6	0%
<i>29 - Information, library and archival affairs</i>	13	3	16	1%
<i>31 - Religious Studies</i>	0	0	0	0%
<i>32 - History and archeology</i>	31	9	40	1%

<i>33 - Philosophy</i>	15	2	17	1%
<i>34 - Cultural studies</i>	10	3	13	0%
<i>35 - Philology</i>	64	12	76	2%
<i>41 - Theology</i>	8	0	8	0%
<i>51 - Economics</i>	209	32	241	8%
<i>52 - Political science</i>	14	14	28	1%
<i>53 - Psychology</i>	40	12	52	2%
<i>54 - Sociology</i>	11	5	16	1%
<i>61 - Journalism</i>	12	4	16	1%
<i>71 - Accounting and taxation</i>	67	5	72	2%
<i>72 - Finance, banking and insurance</i>	86	11	97	3%
<i>73 - Management</i>	181	30	211	7%
<i>75 - Marketing</i>	47	5	52	2%
<i>76 - Entrepreneurship, trade and exchange activities</i>	73	8	81	3%
<i>81 - Law</i>	76	50	126	4%
<i>91 - Biology</i>	41	5	46	1%
<i>101 - Ecology</i>	45	6	51	2%
<i>102 - Chemistry</i>	14	3	17	1%
<i>103 - Earth Sciences</i>	25	0	25	1%
<i>104 - Physics and Astronomy</i>	17	3	20	1%
<i>105 - Applied Physics and Nanomaterials</i>	15	4	19	1%
<i>106 - Geography</i>	17	1	18	1%
<i>111 - Mathematics</i>	16	4	20	1%
<i>112 - Statistics</i>	2	1	3	0%
<i>113 - Applied Mathematics</i>	25	6	31	1%
<i>121 - Software engineering</i>	35	5	40	1%
<i>122 - Computer Science</i>	60	8	68	2%
<i>123 - Computer Engineering</i>	26	3	29	1%
<i>124 - System Analysis</i>	15	0	15	0%
<i>125 - Cybersecurity</i>	18	1	19	1%
<i>126 - Information systems and technologies</i>	46	0	46	1%
<i>131 - Applied Mechanics</i>	27	4	31	1%
<i>132 - Material Science</i>	9	4	13	0%
<i>133 - Sectoral Engineering</i>	39	2	41	1%
<i>134 - Aerospace and missile technology</i>	7	0	7	0%

135 - Shipbuilding	2	0	2	0%
136 - Metallurgy	9	0	9	0%
141 - Electricity, Electrical Engineering and Electromechanics	38	5	43	1%
142 - Power Engineering	2	0	2	0%
143 - Nuclear Power	2	0	2	0%
144 - Thermal power	7	1	8	0%
145 - Hydropower	0	0	0	0%
151 - Automation and Computer Integrated Technologies	27	7	34	1%
152 - Metrology and information and measurement technology	18	8	26	1%
153 - Micro- and nanosystem engineering	3	1	4	0%
161 - Chemical technology and engineering	5	4	9	0%
162 - Biotechnology and bioengineering	8	1	9	0%
163 - Biomedical Engineering	5	0	5	0%
171 - Electronics	13	0	13	0%
172 - Telecommunications and radio engineering	20	3	23	1%
173 - Avionics	3	0	3	0%
181 - Food Technology	33	5	38	1%
182 - Light industry technologies	2	0	2	0%
183 - Environmental technologies	11	4	15	0%
184 - Mining	6	1	7	0%
185 - Oil and Gas Engineering and Technology	4	0	4	0%
186 - Publishing and printing	2	0	2	0%
187 - Woodworking and furniture technologies	5	1	6	0%
191 - Architecture and urban planning	7	0	7	0%
192 - Civil Engineering	31	2	33	1%
193 - Surveying and Land Management	14	1	15	0%
194 - Hydraulic Engineering, Water Engineering and Water Technology	6	1	7	0%
201 - Agronomy	19	6	25	1%
202 - Plant protection and quarantine	2	0	2	0%
203 - Gardening and viticulture	2	0	2	0%
204 - Livestock production and processing technology	13	2	15	0%
205 - Forestry	3	1	4	0%

206 - Landscape gardening	4	1	5	0%
207 - Aquatic bioresources and aquaculture	3	2	5	0%
208 - Agroengineering	9	1	10	0%
211 - Veterinary medicine	8	0	8	0%
212 - Veterinary Hygiene, Sanitation and Expertise	8	0	8	0%
221 - Dentistry	6	2	8	0%
222 - Medicine	20	22	42	1%
223 - Nursing	3	2	5	0%
224 - Medical diagnostics and treatment technologies	2	3	5	0%
225 - Medical Psychology	0	0	0	0%
226 - Pharmacy, industrial pharmacy	8	0	8	0%
227 - Physical therapy, ergotherapy	12	3	15	0%
228 - Pediatrics	5	2	7	0%
229 - Public health	1	0	1	0%
231 - Social work	17	9	26	1%
232 - Social security	7	0	7	0%
241 - Hotel and restaurant business	27	1	28	1%
242 - Tourism	38	2	40	1%
251 - State Security	6		6	0%
252 - State Border Security	2		2	0%
253 - Military Command (by Armed Forces)	17		17	1%
254 - Provision of troops (forces)	14		14	0%
255 - Weapons and military equipment	17		17	1%
256 - National Security	7		7	0%
261 - Fire safety	3	1	4	0%
262 - Law enforcement	13	0	13	0%
263 - Civil Security	8	0	8	0%
271 - River and sea transport	6	0	6	0%
272 - Air transport	8	0	8	0%
273 - Railway transport	14	1	15	0%
274 - Road transport	14	3	17	1%
275 - Transportation Technology (by Type)	28	3	31	1%
281 - Public administration	38	17	55	2%

<i>291 - International Relations, Public Communication and Regional Studies</i>	10	6	16	1%
<i>292 - International Economic Relations</i>	32	8	40	1%
<i>293 - International law</i>	13	2	15	0%

Table 2

Division of experts by region

Region	Academics	Student Applicants	Total	
<i>Vinnitsia region</i>	81	27	108	6%
<i>Volyn region</i>	24	6	30	2%
<i>Dnipropetrovsk region</i>	85	23	108	6%
<i>Donetsk region</i>	11	4	15	1%
<i>Zhytomyr region</i>	50	14	64	4%
<i>Transcarpathian region</i>	16	3	19	1%
<i>Zaporizhia region</i>	65	9	74	4%
<i>Ivano-Frankivsk region</i>	36	3	39	2%
<i>Kirovohrad region</i>	15	9	24	1%
<i>Kiev region</i>	75	13	88	5%
<i>Kyiv region: Kyiv</i>	260	78	338	19%
<i>Luhansk region</i>	6	4	10	1%
<i>Lviv region</i>	115	29	144	8%
<i>Mykolaiv region</i>	12	1	13	1%
<i>Odesa region</i>	93	11	104	6%
<i>Poltava region</i>	61	5	66	4%
<i>Rivne region</i>	21	8	29	2%
<i>Sumy region</i>	56	17	73	4%
<i>Ternopil region</i>	18	2	20	1%
<i>Kharkiv region</i>	143	51	194	11%
<i>Kherson region</i>	21	15	36	2%
<i>Khmelnyskyi region</i>	34	10	44	2%
<i>Cherkasy region</i>	66	14	80	4%
<i>Chernivtsi region</i>	8	4	12	1%
<i>Chernihiv region</i>	51	23	74	4%
<i>Totals:</i>	1423	383	1806	100%

Table 3

Experts - Student Applicants

Applicants	Amount	
<i>undergraduate (junior specialist level)</i>	3	1%
<i>assistant-trainee</i>	2	1%
<i>intern, resident doctor</i>	3	1%
<i>undergraduate student (bachelor level)</i>	176	46%
<i>graduate student (master's level)</i>	70	18%
<i>postgraduate student / adjunct</i>	129	34%
Total:	383	

Financing of the National Agency and its Secretariat

The activities of the National Agency and its Secretariat are financed through the general and special funds of the state budget, as well as through received grants. Last year, revenues to the general fund amounted to 22 million 109 thousand UAH (the same amount was spent), to the special fund - 14 million 969 thousand UAH, grants received by the National Agency - 158 thousand UAH. Total: 37 million 237 thousand UAH.

In 2019, the general fund (direct financing from the state budget) financed wages (including tax accruals), rent and utilities related to the operation of the temporary offices of the National Agency, as well as the renovation of the premises in which the Agency and the Secretariat will operate in 2020, at B. Grinchenko Str., 1 (annex).

The National Agency received a grant from the American Councils for International Education in the amount of \$39 thousand US to create the information platform to support the programme accreditation process. This money went directly to the developers. The New Justice Program purchased organizational and computer hardware amounting to \$14,065 US, which has so far been provided for temporary use by the National Agency. The British Council, the International Foundation for Educational Policy Research, and the Institute for the Development of Education have helped to organize trainings and seminars.

The Special Fund of the NAQA budget receives its revenue from fees charged to HEIs for accreditation. Experts' fees (for accreditations conducted in 2019) amount to almost 5.5 million UAH. Because a large portion of the payments for accreditation were received from HEIs in the last days of the year, the NAQA Secretariat did not manage to pay all the experts' fees, and therefore started 2020 with a debt of almost 6.2 million

UAH. As a result, at the end of 2019, the Special Fund's available funds amounted to just over 3.2 million UAH (see Table 20).

Due to the adoption of resolution № 1070 by the Cabinet of Ministers of Ukraine on December 10, 2019, it became impossible to obtain pre-payments from state HEIs for accreditation services to be provided in 2020. As a consequence, advance payments to members of expert groups must now be paid before funds are received from state HEIs. In January-February alone, according to the approved accreditation schedule, the National Agency should receive 340 applications from higher education institutions for accreditation of educational programs.

Therefore, approximately 1000 experts will receive advances that will allow them to visit the HEI before these institutions pay any amount for the accreditation services of the National Agency. Only if the HEI pay on time according to their obligations will the Secretariat be able to avoid delays in payments of honoraria to experts and reporters of Specialized Expert Councils. As of the end of 2019, the Secretariat of the National Agency introduced a system of financial planning (budgeting), the result of which will be made public by the end of the first quarter of 2020.

2019 – Receipts	Amount, thousand UAH
Special Fund (Fee for Services)	14 969,40
2019 – Expenses	
Honoraria (including accruals) to experts and members of specialized expert councils	5 481,20
Purchase of items, materials, equipment, inventory	64,60
Payment of services (except utilities)	1,50
Total expenses	5 547,30
Balance as of 01/01/2020	9 422,10
1st quarter 2020 (forecast)	
Obligations to experts and members of specialized expert councils (for cases considered in 2019)	6188,8
Balance of special funds available as of 01/27/2020	3 233,3
Amount of cases expected (scheduled) in January-February 2020	340
Funds required to pay advances to experts during January-February 2020	4884,1
Cash gap:	-1650,8