



Professional education and vocational education teachers in Ukraine: experience of the National Transport University

Institutional Report



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ACRONYMS

BGSE – basic general secondary education

CMU – Cabinet of Ministers of Ukraine

NTU – National Transport University

EQLT – educational and qualification level of training

CSE – complete secondary education

VET – vocational education and training

VTE – vocational teacher education

1. PROFESSIONAL TRAINING OF VET TEACHERS AT NATIONAL TRANSPORT UNIVERSITY AND COOPERATION WITH STAKEHOLDERS

National Transport University (NTU) was founded in 1944. According to the education levelled system more the 8 thousand students in 25 specialties and specializations study at five faculties and in two educational centers. The 80% of academic and teaching staff of the university have academic status and degree. They are engaged into fruitful research work on the national and international levels. A lot of lecturers have become the Ukrainian State Prize Laureates in the field of science and technology. The high standards of educational and research work were the main priorities of NTU since its foundation. Thanks to this, National transport university has long-term partnership agreements with leading industry enterprises such as “UkrAVTO” corporation, “Niko” concern, “Toyota-Ukraine” company, etc.

NTU has wide experience in execution of international projects and strong, long-standing traditions of fruitful international cooperation with European and world universities. Among them, more then 20-year-old partnership with Rzeszow University of Technology in the students’ and academic staff mobility programs. Also, University has a National Contact Point of the Horizons 2020 program by section “Smart, green and integrated transport”.

Since 2020, NTU has been participating in the Erasmus+ Project PAGOSTE «New mechanisms of partnership-based governance and standardization of vocational teacher education in Ukraine» (609536-EPP-1-2019-1-DE-EPPKA2-CBHE-SP). This project aims to improve the governance mechanism in the field of vocational education teachers’ training in Ukraine. A general criterion for improving the current state of teacher training is to create the preconditions when the expectations of VET institutions, motivation and competencies of future teachers can be agreed with each other.

PBG (partnership-based governance) is seen as an instrument to tackle this problem by including VET schools in activities such as curricula development or teaching methodology, and it even could mean establishing a governance system based on partnerships reaching beyond these two stakeholders. Since decentralisation is a major aspect of current Ukrainian VET policy, PGB in VET fits into the political agenda, by questioning traditional roles of responsible institutions.

The project aims at developing and piloting governance structures between the Ukrainian partner HEIs and regional VET schools. The focus is on overcoming the theory-practice gap between university education and teaching requirement in VET, and on setting up governance in a new, i.e. partnership-based manner between relevant institutions in VTE.

The project aims at creating awareness for a modern VTE system in Ukraine, and at raising the status of the teaching profession.

The project objective is to foster the quality and relevance of vocational teacher education in Ukraine by establishing standards for vocational teacher education with respect to

partnership-based governance (PBG) mechanisms between universities which offer vocational teacher training and vocational schools.

NTU, as one of the Ukrainian partners of this project, directly participates in VET teachers' training and interested in improving the quality of such training and establishing partnerships with stakeholders. Such stakeholders are:

- VET institutions as employers for NTU graduates in the specialty "Vocational Education (Transport)" and as educational institutions whose graduates can continue their studies at NTU;
- manufacturers of automotive and road equipment, lubricants as providers of modern equipment and materials for training. They also can be interested in graduates of the "Vocational Education (Transport)" specialty as trainers for their training centers.

The profile educational program, according to which NTU trains VET teachers is "Vocational Education (Transport)", specialty "Professional education (transport)" in the field of knowledge 01 "Education / Pedagogy".

The educational program "Vocational Education (Transport)" was launched in 2003 at the Faculty of Mechanical Engineering. Since 2016, training in this specialty is carried out by the Faculty of Economics and Law. Specialists are trained in bachelor's and master's degrees.

The purpose of the educational program is to train a competitive specialist with the fundamental theoretical basis of professional disciplines, latest learning technologies and practical skills, capable for creative engineering, pedagogical and production activities in HEIs, professional higher and vocational education institutions, as well as for engineering, management and organizational activities in the field of automotive transport.

Graduates of this training program successfully work in VET institutions and training centers of automotive transport companies, as well as on engineering positions in automotive enterprises.

The training program includes general, technical, psychological and pedagogical disciplines. Their ratio have changed in the 2019/2020 academic year in a favor of the psychological and pedagogical ones (Figure 1).

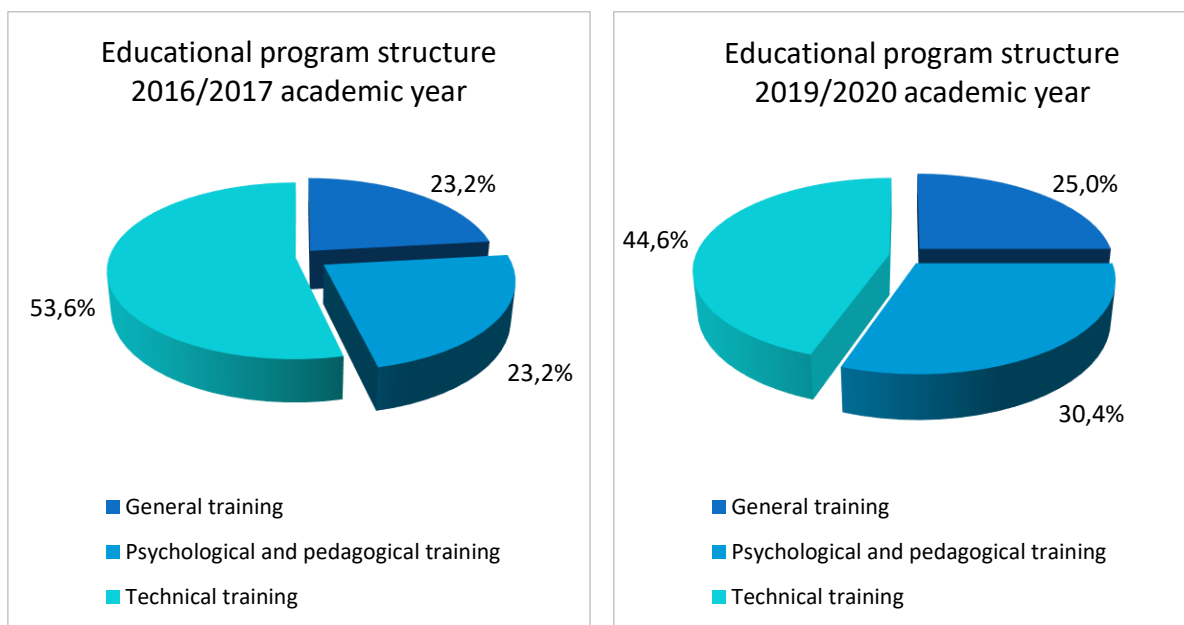


Figure 1. Correlation between general, technical, psychological and pedagogical disciplines in the structural-logical scheme of educational programs “Vocational Education (Transport)” in 2016/2017 and 2019/2020 academic years

In 2019/2020 academic year such disciplines as pedagogical management, professional ethics and business communications, factors of employment and career growth were included into the selective part of the training program by the initiative of the “Vocational Education (Transport)” graduating department - Department of Philosophy and Pedagogy.

The study time, provided by the educational program, is divided into classroom activities (45%) and student's independent studying for processing of educational material (55%) (Figure 2).

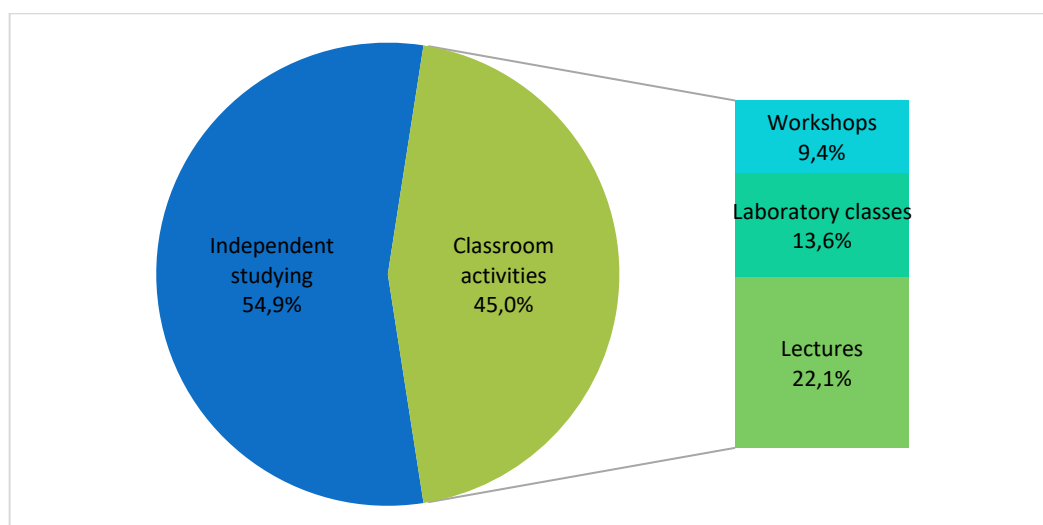


Figure 2. Distribution of students’ study time under the “Vocational Education (Transport)” training program at NTU between auditory classes and independent studying

Much attention is paid to practical training. The bachelor's degree curriculum provides three types of practice: educational, technological and pedagogical. The first two types of practice are organized by the technical departments and pedagogical ones - by the department of philosophy and pedagogy.

The classroom fund used in the educational process 100% meets the needs of students. It includes computer classes, technical laboratories and workshops equipped with the most modern equipment. NTU has a long-term agreements with well-known vehicles', road machines', lubricants' and liquids' manufacturers on the continuous updating of equipment used for educational purposes (Figure 3).



Figure 3. *NTU's laboratories for training students in "Vocational Education (Transport)" training program*

As for the dynamics of the "Vocational Education (Transport)" training program entrants' number at NTU, it should be noted that in recent years there have been general trends that is common for Ukraine in a whole (Figure 4).

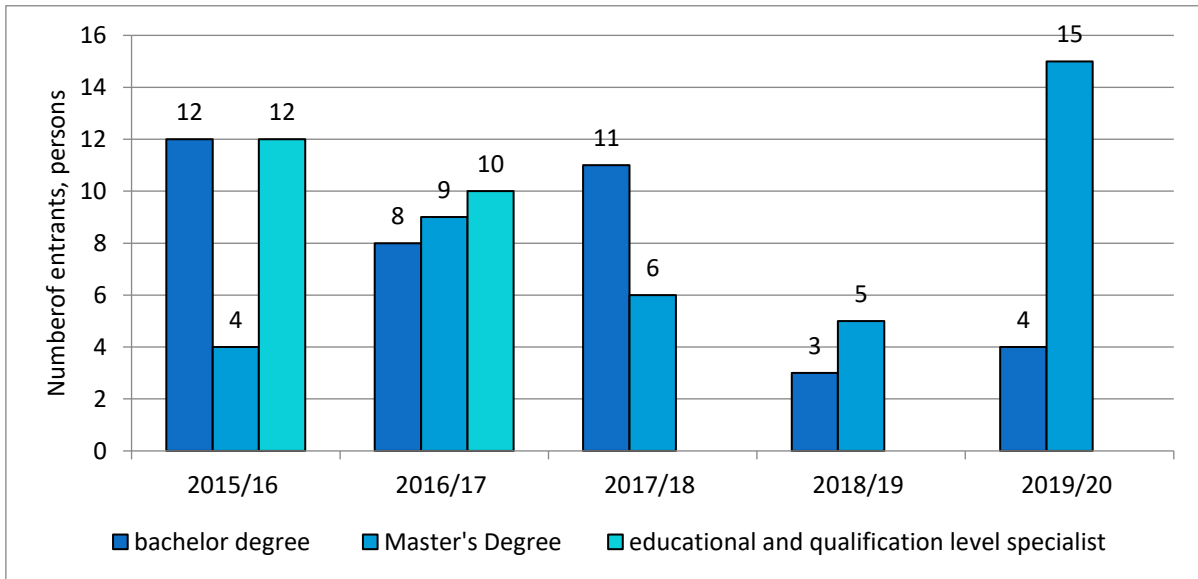


Figure 4. Dynamics of the entrants' number for the "Vocational Education (Transport)" training program to obtain a bachelor degree in NTU from 2015 to 2019

The significant reduction in enrollment in the "Vocational Education (Transport)" training program during the last couple years can be seen. In 2019/2020 academic year the number of entrants to obtain a bachelor degree decreased by 80%.

The academic and pedagogical staff, providing the educational process in the educational program, is 30 people (general disciplines - 11 teachers, psychological and pedagogical disciplines - 6 teachers, technical - 13 teachers). The structure of teaching staff by position is presented in Figure 5. As it can be seen, 27% of them are professors (8 people), 57% are associate professors (17 people), 10% are senior lecturers (3 people) and 7% are assistant lecturers (2 people).

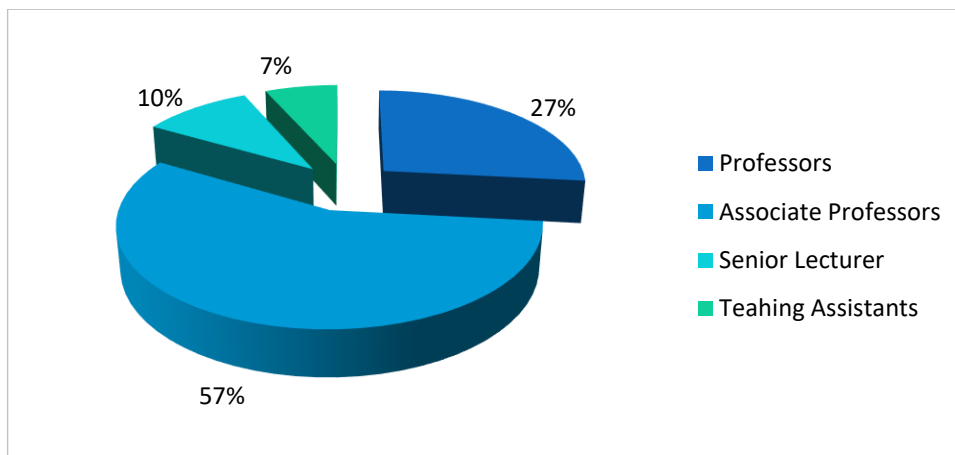


Figure 5. Structure of NTU educational and pedagogical staff by positions involved in "Vocational Education (Transport)" training program in 2019/2020 academic year

The structure of educational and pedagogical staff according to the level of qualification is presented on Figure 6.

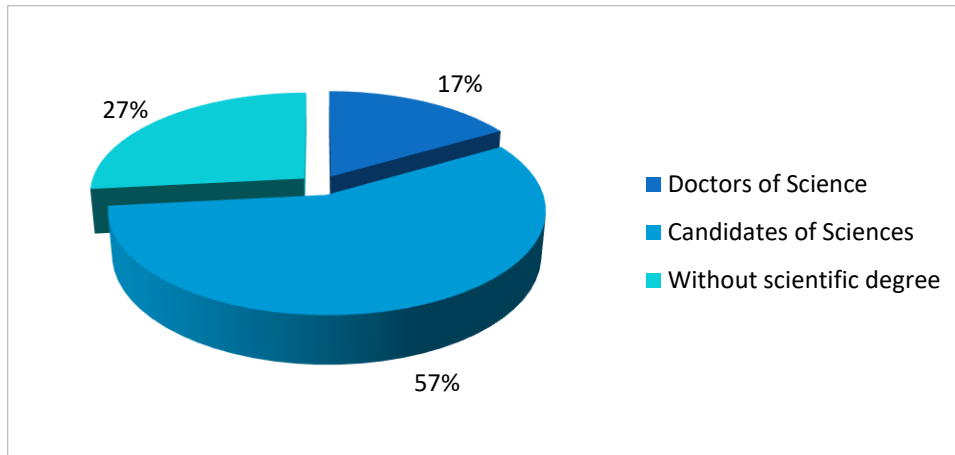


Figure 6. Structure of NTU educational and pedagogical staff by qualification involved in "Vocational Education (Transport)" training program in 2019/2020 academic year

As can be seen, 73% of academic and pedagogical staff have scientific degrees. 17% of them are doctors of sciences (5 people), 57% are candidates of sciences (17 people).

It should be noted that NTU actively cooperates with stakeholders:

- employers from production;
- VET institutions that act, on the one hand, as employers for graduates of the "Vocational Education (Transport)" training program, on the other hand, their graduates later become students of NTU;
- vehicles', road machines', lubricants' and liquids' manufacturers, that provide the latest equipment and materials for NTU laboratories training needs;
- students.

In addition, academic and teaching staff involved in the "Vocational Education (Transport)" training program, systematically participate in the employees training of NTU separated divisions. Graduates from "Vocational Education (Transport)" training program are employed in all of this divisions.

Such separate structural subdivisions are:

1. Bar College of Automotive and Highway Engineering of National Nransport University (website: <http://bktbntu.com.ua>) (Table 1).

Table 1. Specialties and information about the necessary education for admission to Bar College of Automotive and Highway Engineering of National Nransport University

List of specialties	Basic educational level
Road transport	BGSE

Industry engineering Construction and civil engineering Transport technologies (road transport) Geodesy and land management	CSE EQLT "Skilled worker"
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2. Nadvirna College of National Transport University (website: <http://ncntu.com.ua>) (Table 2).

Table 2. *Specialties and information about the necessary education for admission to Nadvirna College of National Transport University*

List of specialties	Basic educational level
Information, library and archival business Economy Accounting and taxation Finance, banking and insurance Law Computer Science Electric power, electrical engineering and electromechanics Construction and civil engineering Road transport Transport technologies on road transport	BGSE CSE EQLT "Skilled worker" EQLT «Junior Specialist» Bachelor's degree (for study in another specialty)

3. Lviv Higher Vocational School of Transport Technologies and Services of National Transport University (website: <http://lvputts-ntu.lviv.ua>) (Table 3).

Table 3. *Specialties and information about the necessary education for admission to Lviv Higher Vocational School of Transport Technologies and Services of National Transport University*

List of specialties	Basic educational level
Electric gas welder Adjuster of machine tools and manipulators with programmed control Programmed machine operator Computer typing operator, tourism agent Computer typing operator, cashier (at the bank) Computer typing operator, office clerk (accounting) Locksmith for the repair of wheeled vehicles, electric and gas welder Turner Milling machine operator	BGSE CSE EQLT «Junior Specialist»

Technician-programmer (computer science)	
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4. Zhytomyr Automobile and Highway College of National Transport University (e-mail: zadk@zt.ukrtel.net) (Table 4).

Table 4. *Specialties and information about the necessary education for admission to Zhytomyr Automobile and Highway College of National Transport University*

List of specialties	Basic educational level
Industry engineering	BGSE CSE EQLT "Skilled worker"
Accounting and taxation	
Construction and civil engineering	
Road transport	
Transport technologies on road transport	

5. State higher educational institution „The Kyiv College of Transport and Economics” of National Transport University (website: <http://www.ktek.kiev.ua>) (Table 5).

Table 5. *Specialties and information about the necessary education for admission to State higher educational institution „The Kyiv College of Transport and Economics” of National Transport University*

List of specialties	Basic educational level
Road transport	BGSE CSE
Transport technologies on road transport	
Accounting	
Finance and Credit	
Organization of service on transport	
Tourist service	

In addition to employees training, NTU provides separate structural divisions with multilateral support: legal, technical, organizational, production of printing products, assistance in employing graduates at leading enterprises in the industry. In turn, structural divisions provide advisory support during updating of educational programs, including the "Vocational Education (Transport)" training program.

2. METHODOLOGY OF RESEARCH OF VET TEACHER TRAINING ORGANIZATION AT NTU

During the work on the Erasmus+ Project PAGOSTE «New mechanisms of partnership-based governance and standardization of vocational teacher education in Ukraine» (609536-EPP-1-2019-1-DE-EPPKA2-CBHE-SP), National Transport University project team together with other project teams of Ukrainian partners:

- Ministry of Education and Science of Ukraine (website: mon.gov.ua)
- Kyiv National Economic University named after Vadym Hetman (website: www.kneu.edu.ua)
- Institute of Vocational Education and Training of NAPS, (website: www.ivet-ua)
- Ukrainian Engineering Pedagogics Academy, (website: www.uipa.edu.ua)
- South Ukrainian National Pedagogical University named after K. D. Ushynsky (website: pdpu.edu.ua)

took part in the development of questionnaires for the survey of students in specialty "Professional Education", teachers involved in the training of future VET teachers, heads of VET institutions, teachers of VET institutions.

The target groups of the study were:

- applicants for higher education in the specialty "Professional Education" - future teachers of VET institutions;
- teachers of higher education institutions that train teachers for VET institutions;
- heads of VET institutions;
- teachers of VET institutions.

The questionnaires were aimed to study the target groups perception of the quality of vocational teachers' training organization, applicants' satisfaction with the level of acquired professional competencies, compliance of VET teachers' training with the needs of VET institutions.

The questionnaires contained closed, semi-closed and open questions.

The form of answer among the closed questions were: dichotomous (yes / no answers); polyvariant (several answer options are offered); scale (for example, fully agree / agree / partially agree / disagree / difficult to answer); tabular.

Semi-closed questions provided the opportunity for respondent to give his own answer.

At the end of the questionnaire, the respondents were asked open-ended questions that assumed an independent and detailed answer.

The survey was conducted using Google forms, which provides access to the questionnaire at a convenient for the respondents time.

NTU project team conducted a survey of two target groups:

- students of the specialty "Vocational education (transport)";
- teachers, involved in the future VET teachers' training.

The questionnaires are given in Annexes I and II.

3. ANALYSIS OF THE RESULTS OF THE SURVEY OF CERTAIN TARGET GROUPS AT NTU

3.1 ANALYSIS OF THE SURVEY RESULTS OF TEACHERS WHO TRAIN STUDENTS IN THE SPECIALTY 015 "VOCATIONAL EDUCATION (TRANSPORT)" AT NTU

The survey involved 13 teachers who train students in specialty 015 " Vocational Education (Transport)" at the National Transport University. 54% of the respondents are men and 46% are women.

All survey participants are over 30 years old. Most of them (92%) are under 50 years old, and the share of people in the 31-40 age category and in the 41-50 age category is 46% each. These results show that over the past 10 years, there has been no replenishment of the teaching staff with young specialists in the category of 21-30 years old, and this may lead to an increase in the age gap between teachers and a shortage of personnel in the future.

Scientific and pedagogical experience is directly proportional to the age of teachers: half of the respondents in aged between 31 and 40 have 4-10 years of experience, another half - 11-20 years. The same situation is observed in the 41-50 age group – half of the respondents have 11-20 years of experience, and the rest - more than 20 years.

46% of the respondents are teachers of special (professional) training disciplines, 31% lay out general training disciplines and 23% are representatives of pedagogical and psychological disciplines, which fully reflects the structure of the curriculum.

Cooperation with universities is the most developed field – 77% of the respondents noted this option. The second most popular variant are vocational education institutions. They were found in the answers of 38% of the respondents. Vocational education institutions were noted by 31% of the respondents. Employment centers and scientific institutions were found in 23% of the answers, educational and methodological centers (offices) of vocational education, postgraduate pedagogical education institutions, the Ministry of Education and Science of Ukraine, private entrepreneurs, enterprises were noted in the 15% of answers. 8% of respondents maintain partnerships with professional associations (unions) and Kyiv Regional Center for Knowledge Quality Assessment.

The generalized assessment of cooperation between HEIs and VET institutions is generally positive: 38% of the respondents consider it as "quite satisfactory", 54% as "rather satisfactory", and only 8% as "rather unsatisfactory".

According to the respondents, such areas of cooperation as organizing and conducting pedagogical practice of students (100% positive ratings), organizing training and skilling up events for teachers (92% of positive ratings), conducting classes in pedagogical disciplines (84% of positive ratings) and conducting classes in professional training disciplines (84% of positive ratings) are organized best of all. Cooperation in such areas as development of the

educational program and curricula content for academic disciplines (77% of positive ratings), career guidance (62% of positive ratings), future teachers' employment (61% of positive ratings) and joint activities (53% of positive estimates) is slightly worse. The respondents believe that the weakest link in cooperation is the joint implementation of educational (training) projects (46% of positive ratings). This allows us to consider the involvement of VET institutions into implementation of joint projects, including international ones, as one of the promising areas for the partnership development.

Absolutely all respondents consider it expedient to develop cooperation with VET institutions. Among the most priority areas of cooperation were noted: organization and conduction of pedagogical practice for students (77% of answers "quite appropriate"), employment of future teachers (77% of answers "quite appropriate"), development of educational content and curricula (69% of answers "quite appropriate"), career guidance (69% of answers "quite appropriate"). Such areas as conducting classes in pedagogical disciplines, conducting classes in professional disciplines and joint implementation of educational projects received 62% of the answers "quite appropriate." 54% of respondents consider it "expedient" to hold joint events and organize events for teachers' training and skilling up.

Considering that such areas as organization and conduction of pedagogical practice for students, conducting classes in pedagogical disciplines, conducting classes in professional disciplines, development of educational content and curricula were marked as already well organized, the most promising areas for development of cooperation are employment of future teachers, career guidance and joint implementation of educational projects.

It is interesting, that slightly less than half (46%) of respondents consider it appropriate to involve teachers from VET institutions to conduct classes in HEIs, while the vast majority (77%) prefer to involve teachers from HEIs to conduct classes in VET institutions.

62% of the respondents feel the need for the continuous development of their professional and pedagogical competence, and another 30% are inclined to this. In turn, only 15% of the respondents consider it expedient to participate in the events held by the VET institutions, and another 46% believe that this could be useful.

This position may be due to the limitation or complete lack of information about the agenda and essence of upskilling events in VET institutions, since 31% of respondents noted that they do not have the opportunity to communicate on professional issues with colleagues from vocational education institutions (on the joint conferences, job fair, etc.) and another 23% said that it was difficult for them to answer. That is, in fact, 54% of the respondents either have partial access to information about such events or do not have it at all.

At the same time, the absolute majority of respondents (92%) consider it expedient to create a specialized online platform for professional communication between all stakeholders in the process of VET teachers' training.

3.2 ANALYSIS OF THE SURVEY RESULTS OF STUDENTS WHO STUDY IN THE SPECIALTY 015 "VOCATIONAL EDUCATION (TRANSPORT)" AT NTU

The survey involved 30 students studying in the specialty 015 "Vocational Education (Transport)" at the National Transport University. 93.33% of the respondents are males and 6.67% are females.

Most of the respondents (90%) are between 20 and 25 years old, the rest are younger than 20. 46.67% of students are obtainers of the first (bachelor's) level of higher education. Of these, 20% are 3rd and 4th year students, 6.67% are 2nd year students. The rest of the respondents are students of the 2nd (master's) level of higher education in their first year of study. The overwhelming majority of students (63.33%) are origin from the city, 30% from the countryside and 6.67% from urban-type settlements.

23.33% of the respondents indicated a desire to study as the main motivation, for 16.67% this specialty is a hobby since childhood and 13.37% found it difficult to answer. The opportunity to be creative (10%), the social significance of the profession (10%), the possibility of employment, the demand in the labor market (6.67%), the opportunities that the specialty provide in general (3.33%), family traditions, the desire to follow the example of parents or other relatives (3.33%) is the least popular motivation among students.

The majority of respondents (43.33%) noted an accident or coincidence as the main reason for entering this specialty. The second most popular motive (36.67%) was the opportunity to study at the expense of the state budget. The prospect of receiving a stable income, advice from acquaintances, friends, relatives and the prestige of the profession in society were found in 26.67% of the responses.

For 50% of the respondents noted that the choice of a higher education institution was due to the fact that it provides high quality education. 40% noted that there they can get a profession that they like, and 36.67% of the answers indicated that it is interesting to study in this institution. Advice from parents, relatives, friends, acquaintances influenced the decision of 33.33% of students. The institution has a high reputation, prestige, the institution is well located (near the house, it is convenient to get there, etc.), and also the fact that the institution has a powerful material and technical base, a well-developed infrastructure (hostel, library, canteen, computer classes, etc.) as a motivation for the choice was indicated by 23.33% of students. The fact that it is easy to study in this institution, the small competition for admission to study and the fact that the institution has a moderate cost of education was decisive for 16.67% of respondents. The least popular options were the opportunity to work in a specialty while studying (13.33%), found it difficult to answer (10%) and the possibility of internship abroad (6.67%).

The vast majority of students are either completely satisfied (63.33%), or rather satisfied (26.67%) with their studies. This position was reflected in the assessment of individual

components of the educational process, namely: the availability of educational materials, the accessibility and ease of use of hostels, canteens, sports facilities – 86.67% of positive ratings; teaching methods, involvement of practitioners in teaching, training content, the readiness of the teachers of the institution to answer questions, provide the necessary support during training – 83.33% of positive assessments; the willingness of the administration of the institution to answer questions and provide the necessary support during training, the availability of necessary information regarding the educational program and the organization of training, accessibility and ease of use classrooms and the necessary equipment – 80% of positive ratings; a list of selected disciplines – 76.67% of positive ratings; practical training during studying, organization of students' leisure during extracurricular time – 70% of positive ratings; participation in international projects in study time – 66, 67%. As can be seen from the results, the involvement of students in the implementation of international projects during studying can become a potential direction for increasing their satisfaction with the educational process.

On various aspects of teaching disciplines, 90% of respondents agree that there is feedback from teachers with students (analysis of errors, willingness to answer students' questions and provide other support in the study of the discipline), 86.67% note the ability of teachers to interest students and motivate them to the study of the discipline, 80% agree that the material is presented clearly and easily and 73.33% agreed that the materials do not repeat.

The organization of the educational practice was also assessed by students at a high level in all aspects, namely: management from the higher education institution (76.67% of positive grades), management from the practice base (76.67% of positive grades), practice base (73.33 positive evaluations), content of practice (70% of positive evaluations), duration (66.67% of positive evaluations), period of conducting (60% of positive evaluations).

Proportional results were obtained in relation to manufacturing practice: period of conducting (70% of positive ratings), management from the practice base (66.67% of positive ratings), duration (66.67% of positive ratings), content of practice (63.33% of positive ratings), practice base (63.33% positive ratings), management from the higher education institution (63.33 positive ratings).

It should be mentioned that at the time of the survey, 10% of respondents had not yet completed educational practice and 20% had not completed manufacturing one.

Thus, the majority of students assess their own experience of conducting classes during the educational practice positively: 36.67% characterize it as “very good” and another 26.67% are inclined to answer “rather good”. Only 10% of the respondents characterize their own experience from the negative side: “very bad” - 6.67% and “rather bad” - 3.33%. The rest of the respondents found it difficult to answer (10%) or they did not put answer at all (16.67%). Such results are most likely due to the fact that 43.33% of the respondents feel themselves well prepared to conduct classes in VET institutions, and 26.67% as very well prepared.

Another area of educational process improving can be the involvement of students in the discussion of ways to improve the organization of the educational process. Thus, 23.33% of the respondents noted that they often take part in such discussions. Another 36.67% do it sometimes and the same number never participated in such activities. These results can be explained by the fact that the most active part in solving organizational and administrative issues take students involved in self-government, while the rest take part only in surveys organized by teachers or the dean's office.

This hypothesis is confirmed by the fact that an oral questioning initiated by a teacher (30%), a survey initiated by a teacher (26.67%), a survey initiated by student government bodies (20%), a survey initiated by the administration of the institution (16.67%) were noted as the most popular forms of feedback.

Among the most popular sources of information, respondents noted information from teachers and students (53.33% use it very often) and the official website of the institution (46.67% use it very often).

36.67% of the respondents are fully aware with the institutions about VET institutions where they can be employed after graduation. Another 33.33% have it in a very limited amount and 30% do not have this information at all. Basically, students receive this information from the official websites of institutions (30%), official pages of institutions in social networks (23.33%) or from teachers and students (26.67%). Less common are advertising brochures, posters, banners, message boards (16.67%), unofficial pages dedicated to institutions, on the Internet and/or groups in social networks (13.33%) and job fairs (13.33%). This gives reason to consider the creation of a unified online platform, which will provide relevant information from all VET institutions with career guidance materials and job offers, as the most expedient and promising source of information for future teachers.

In general, even under such conditions, students assess the cooperation between HEI and VET institutions at a sufficiently high level: 43.33% believe that it is very well organized and 30% more - that it is organized rather good.

The respondents believe that the most expedient directions for the cooperation development are the organization and conduction of students' practice (63.33%) and the conduction of classes in psychological and pedagogical disciplines (53.33%). Students estimate the prospects for joint implementation of educational (training) projects (26.67%) and employment of future teachers (23.33%) rather low. This mood can be explained by the fact that the students did not have significant experience in such areas of cooperation.

The opinions of the respondents on the expediency of involving VET teachers in conducting practical classes were divided: 46.67% consider such measures expedient, 6.67% – not. 46.67% found it difficult to give an unambiguous answer to this question. Most likely, this can

explain the inconsistency of opinions about what kind of tasks should be addressed to the invited VET teachers.

Another feature of students' training in Ukraine is that 90% of them constantly (50%) or from time to time (40%) combine their studies with paid work. Moreover, in 50% of cases this work does not correspond to the specialty at all, in 40% of cases it partially corresponds and in 10% - it fully corresponds.

Probably that's why 50% of the respondents most likely will not go to work as a VET teacher and 6.67% have unequivocally decided on this. At the same time, 20% of students confidently chose this career path for themselves, and another 10% are inclined towards it.

Most of the students who do not plan to connect their lives with vocational education do not plan to work in education at all (36.67%). 16.67% would like to engage in entrepreneurial activity in the field of educational services, 13.33% to work in an institution of higher education, 10% in a vocational institution of pre-higher education, 6.67% in a scientific institution and 3.33% in an educational (scientific) methodological center (office) of vocational education.

This trend is explained by the fact that quite a lot of students (43.33%) choose this specialty by the chance or for the sake of the opportunity to study at the expense of the state budget (36.67%). And these numbers are absolutely proportional to the intentions for employment.

4. SUGGESTIONS FOR IMPROVING THE QUALITY OF VET TEACHER TRAINING PROCESS AT NTU

The results of the survey showed that the respondents highly appreciate the level of organization of cooperation between the National Transport University and vocational education institutions. However, this study nevertheless highlighted a number of ways to improve the quality of VET teacher training. These paths can be divided into three main categories:

- career guidance and popularization of the vocational education and training profession;
- building closer partnerships with stakeholders;
- measures aimed to improve the training content.

Among the ways that can help increase student commitment to teaching and popularize it, attention should be paid to the following methods:

- involvement of students in educational activities and participation in career guidance activities, master classes, scientific and practical seminars both on the universities and VET bases;

- involving students in joint educational and international projects, which will allow them to immerse themselves more deeply in the atmosphere of teaching and find aspects that may interest them;
- strengthening career guidance work and increasing media activity in social networks and Internet resources;
- Facilitating students' access to information about employment opportunities and career development in VET institutions.

Establishing closer relationships with stakeholders also can be done in several ways. First, it is cooperation with business representatives, in particular, with automotive centers to attract students to work in their educational centers for automotive specialists' advanced training. Close cooperation with other employers, such as VET institutions, training companies, training centers and employers' associations, is also important.

Secondly, it is establishing cooperation between the teaching staff of NTU and VET institutions regarding joint discussion of the study programs, curricula of individual disciplines, organization of advanced training in various forms, joint implementation of scientific and educational projects, employment of future VET teachers and organization of joint conferences, round tables, methodical seminars.

Among the ways to improve the educational content, the most promising are measures aimed at:

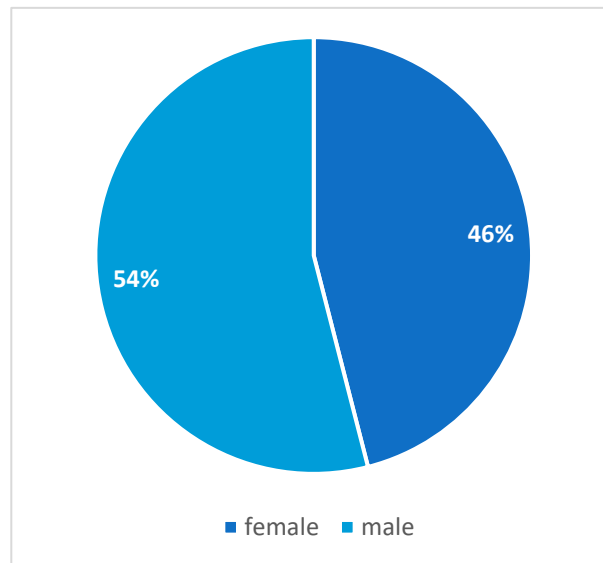
- increasing practical training and conducting pedagogical internship in the VET institutions;
- implementation of dual education elements, when students have the opportunity to study some modules in existing automotive enterprises;
- providing opportunities for abroad internships and participation in the international projects during studies;
- increasing the level of digitalization and the use of modern educational technologies, in particular distance learning.
- development of students communication skills, including fluency in foreign languages.

ANNEX I

THE SURVEY RESULTS OF HEI TEACHERS WHO TRAIN STUDENTS IN THE SPECIALTY 015 "VOCATIONAL EDUCATION (TRANSPORT)" AT NTU

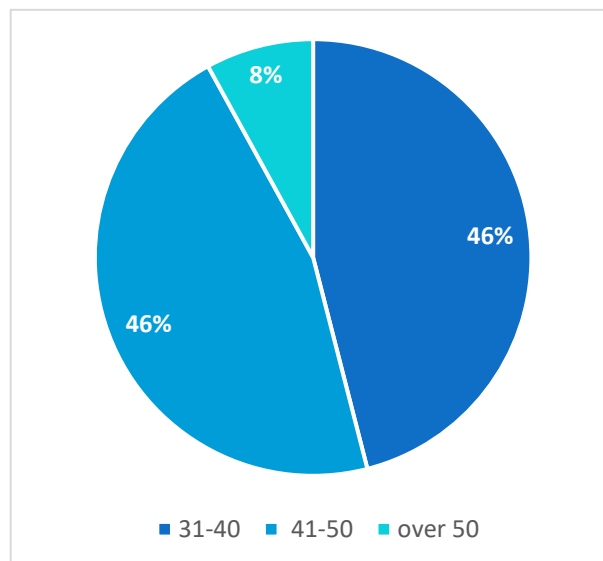
1. You are:

- female – 46%
- male – 54%



2. Your age:

- 31-40 – 46%
- 41-50 – 46%
- over 50 – 8%



3. Which higher education institution do you teach in?

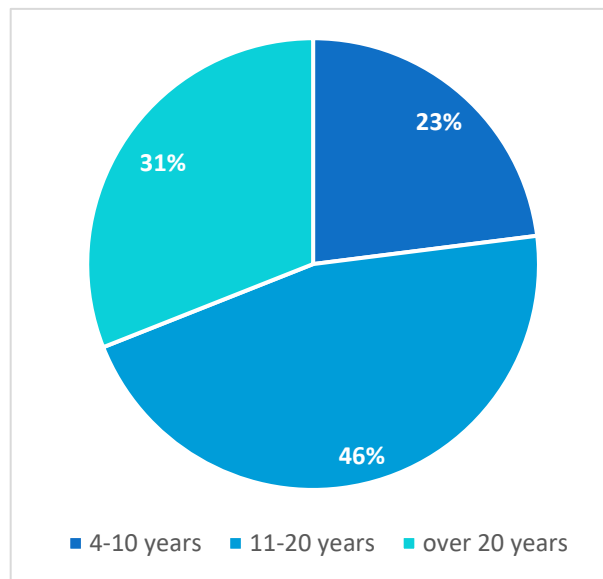
- National Transport University – 100%

4. Specialization of the study program you teach:

- Transport – 100%

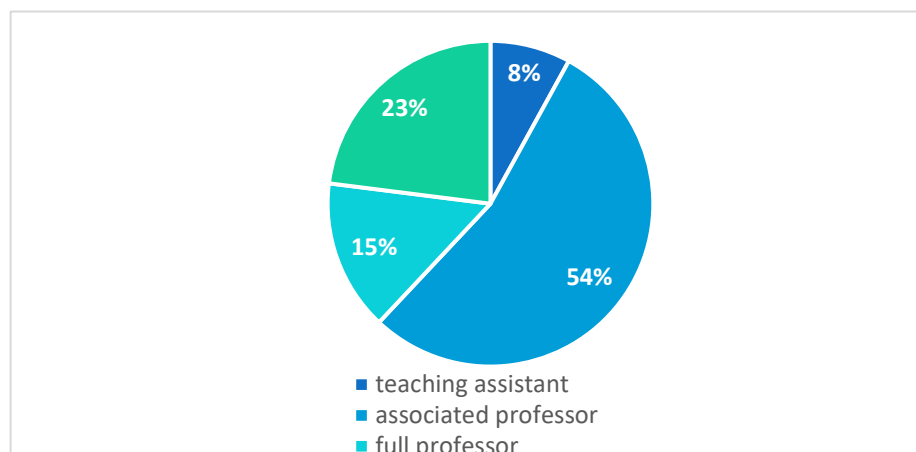
5. Your experience in teaching at higher education institutions:

- 4-10 years – 23%
- 11-20 years – 46%
- over 20 years – 31%



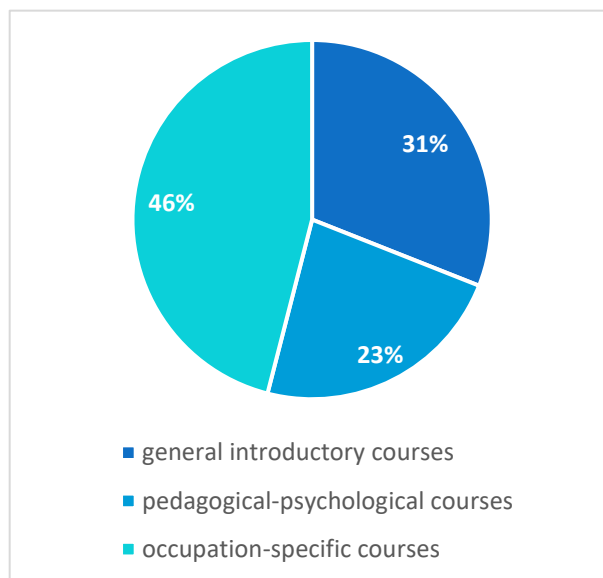
6. Your position:

- teaching assistant – 8%
- associated professor – 54%
- full professor – 15%
- senior lecturer – 23%



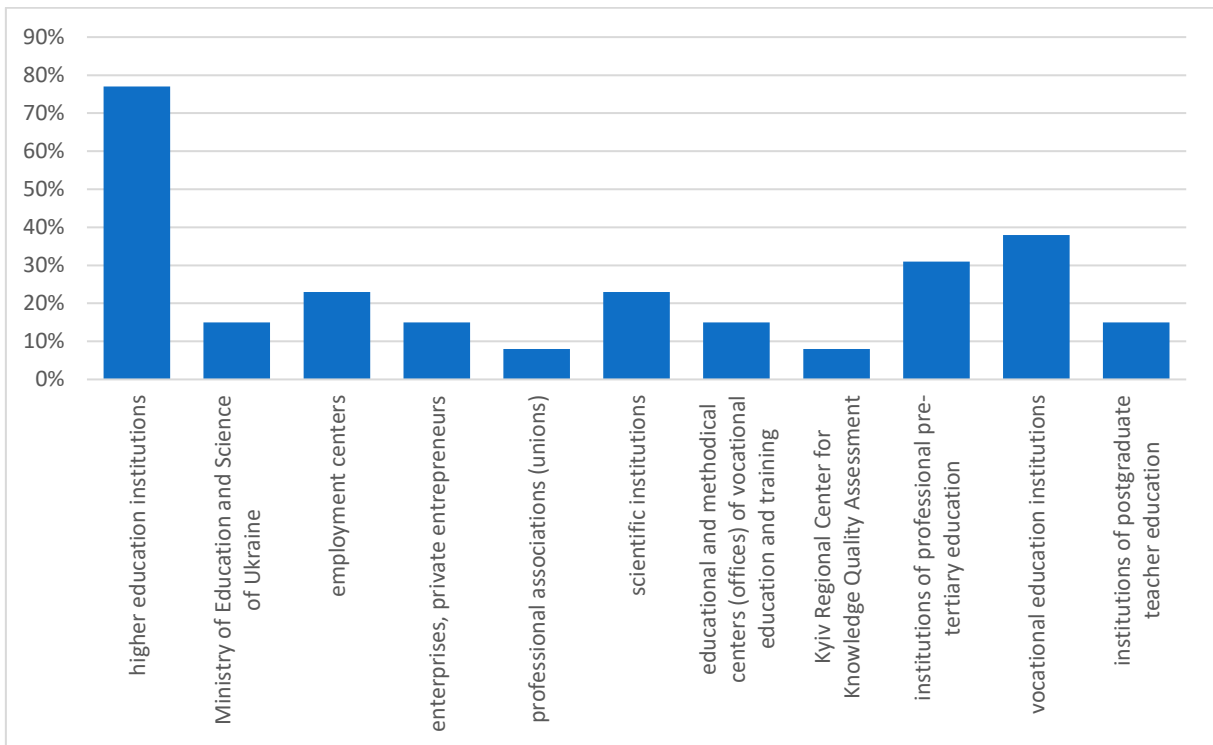
7. What courses do you teach?

- general introductory courses – 31%
- pedagogical-psychological courses – 23%
- occupation-specific courses – 46%



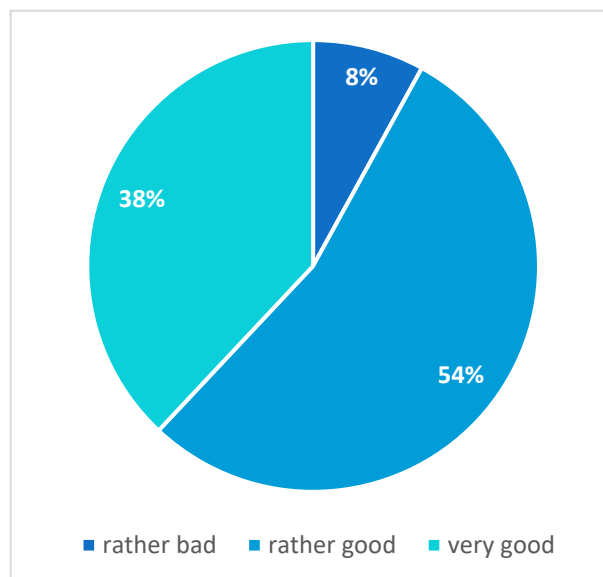
8. With which partners did you have a chance to cooperate? (there may be several variant of answers)

- higher education institutions – 77%
- Ministry of Education and Science of Ukraine – 15%
- employment centers – 23%
- enterprises, private entrepreneurs – 15%
- professional associations (unions) – 8%
- scientific institutions – 23%
- educational and methodical centers (offices) of vocational education and training – 15%
- Kyiv Regional Center for Knowledge Quality Assessment – 8%
- institutions of professional pre-tertiary education – 31%
- vocational education institutions – 38%
- institutions of postgraduate teacher education – 15%



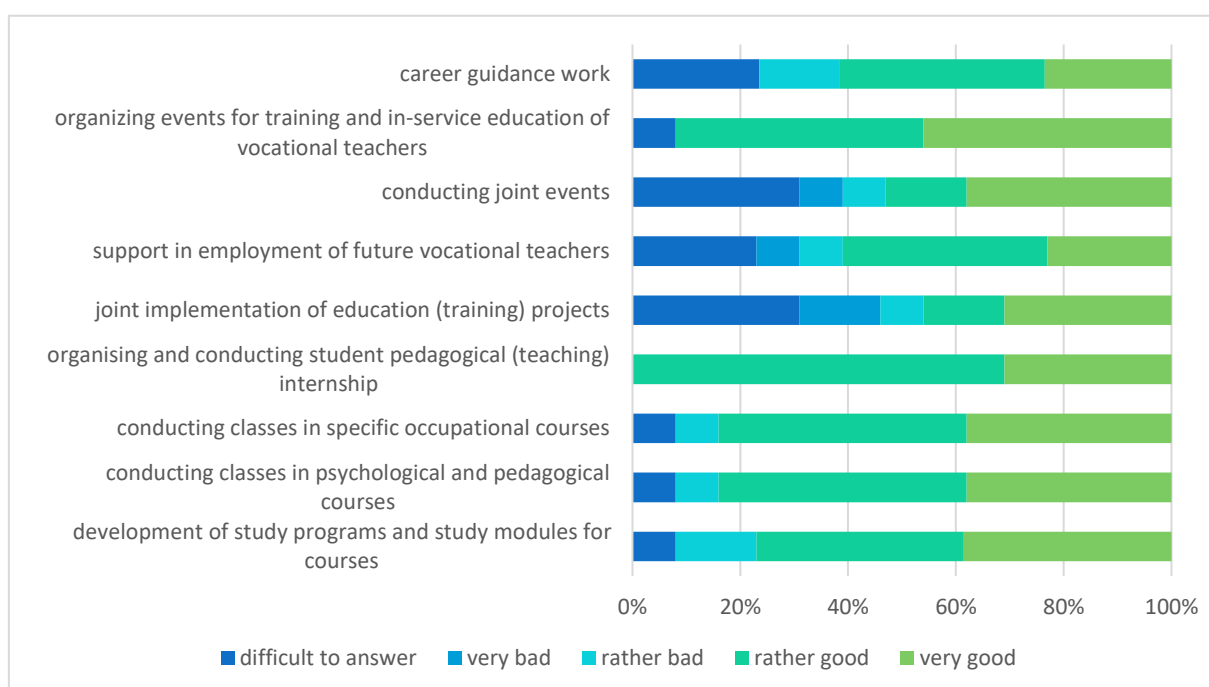
9. How would you evaluate the cooperation of your institution with vocational education institutions, which have study programs in vocational teacher education?

- rather bad – 8%
- rather good – 54%
- very good – 38%



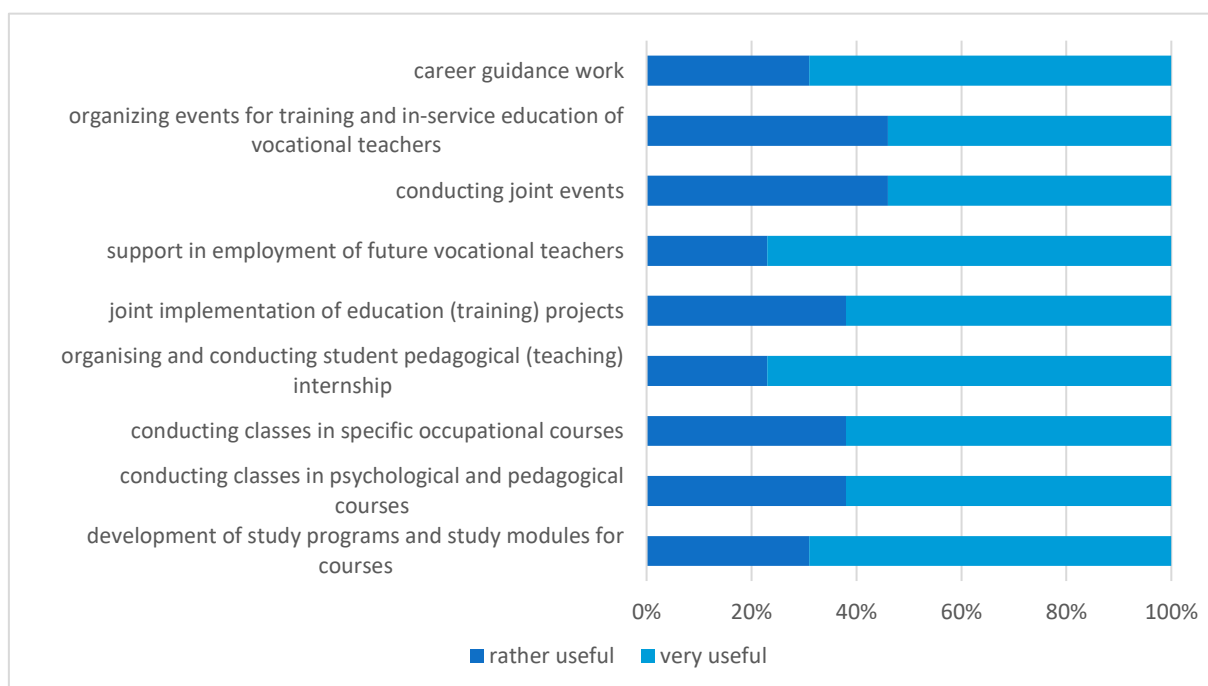
10. Please evaluate the cooperation of your higher education institution with vocational education institutions in the following directions:

Direction	difficult to answer	very bad	rather bad	rather good	very good
Development of study programs and study modules for courses	8%	–	15%	38,5%	38,5%
Conducting classes in psychological and pedagogical courses	8%	–	8%	46%	38%
Conducting classes in specific occupational courses	8%	–	8%	46%	38%
Organising and conducting student pedagogical (teaching) internship	–	–	–	69%	31%
Joint implementation of education (training) projects	31%	15%	8%	15%	31%
Support in employment of future vocational teachers	23%	8%	8%	38%	23%
Conducting joint events	31%	8%	8%	15%	38%
Organizing events for training and in-service education of vocational teachers	8%	–	–	46%	46%
Career guidance work	23,5%	–	15%	38%	23,5%



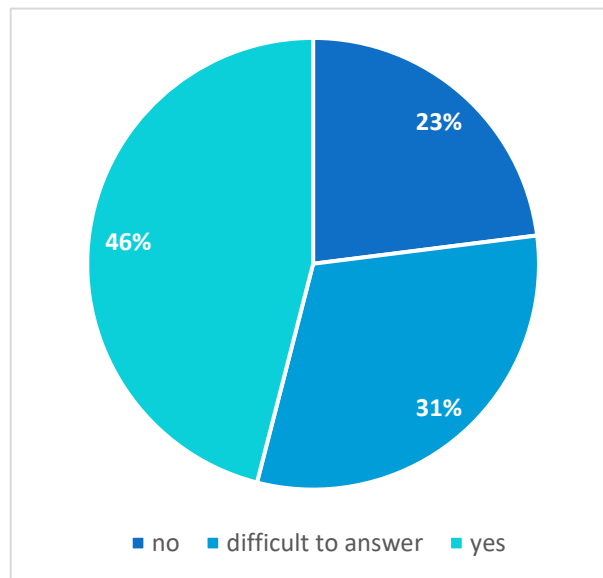
11. In your opinion to which extent is it useful for your institution to cooperate with higher education institutions, which offer study programmes in vocational teacher education, in the following directions:

Direction	difficult to answer	very useless	rather useless	rather useful	very useful
Development of study programs and study modules for courses	–	–	–	31%	69%
Conducting classes in psychological and pedagogical courses	–	–	–	38%	62%
Conducting classes in specific occupational courses	–	–	–	38%	62%
Organising and conducting student pedagogical (teaching) internship	–	–	–	23%	77%
Joint implementation of education (training) projects	–	–	–	38%	62%
Support in employment of future vocational teachers	–	–	–	23%	77%
Conducting joint events	–	–	–	46%	54%
Organizing events for training and in-service education of vocational teachers	–	–	–	46%	54%
Career guidance work	–	–	–	31%	69,0%



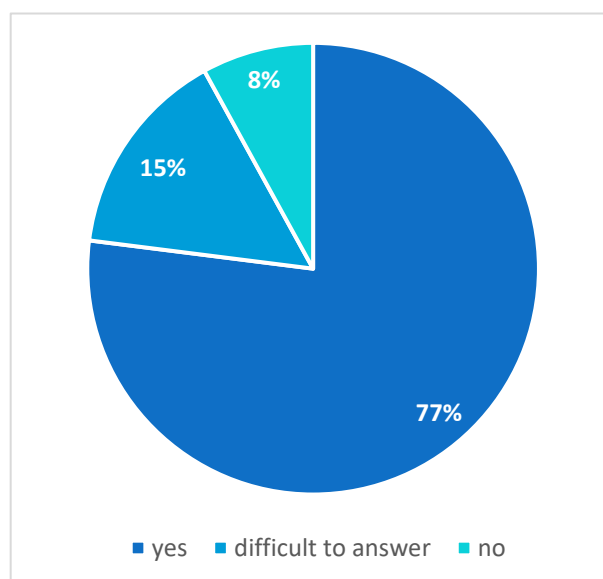
12. Do you think it is useful to involve vocational teachers in conducting some classes at your institution?

- no – 23%
- difficult to answer – 31%
- yes – 46%



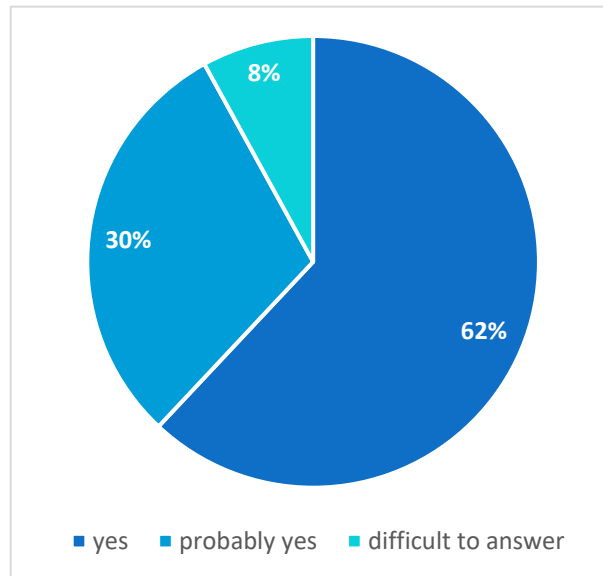
13. Do you think it is useful to involve teachers/lecturers of higher education institutions in conducting some classes at vocational education institutions?

- yes – 77%
- difficult to answer – 15%
- no – 8%



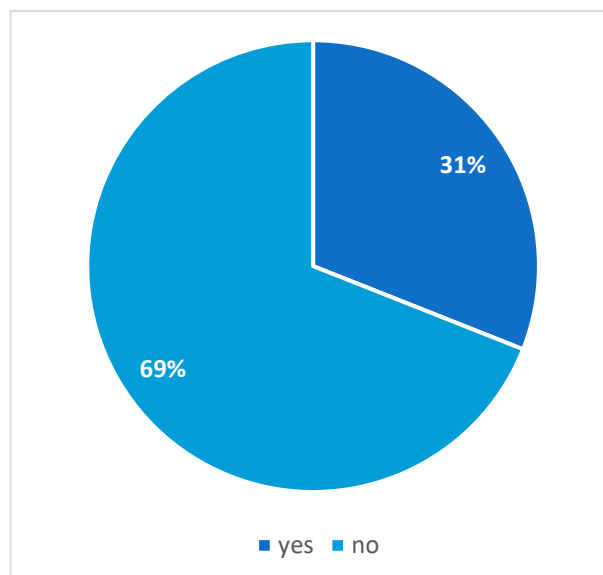
14. Do you have a need for constant professional development of your competences?

- yes – 62%
- probably yes – 30%
- difficult to answer – 8%



15. Have you ever participated in events for in-service education and further training at higher education institutions?

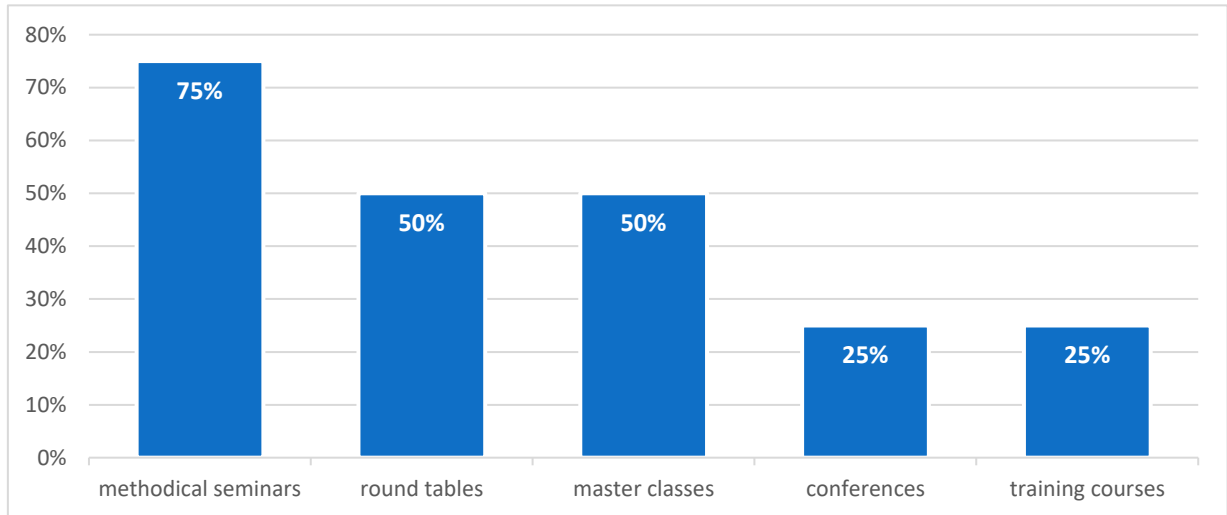
- yes – 31%
- no – 69%



16. In which events for further training conducted at/by vocational education institutions did you take part? (Several answers are possible)

- conferences – 25%

- round tables – 50%
- master classes – 50%
- methodical seminars – 75%
- training courses – 25%

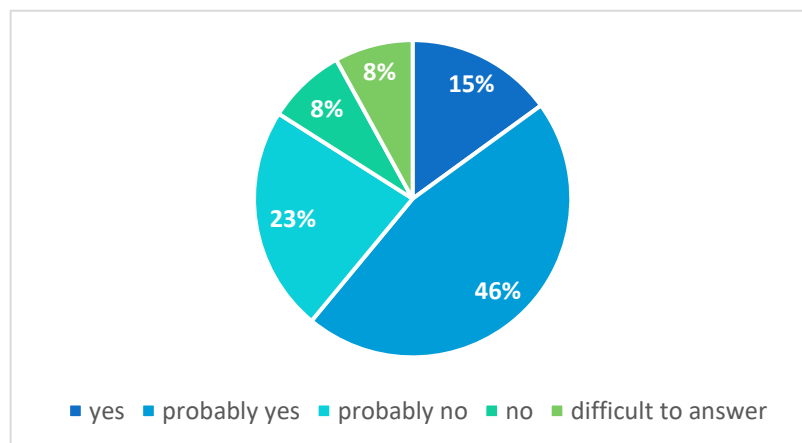


17. To which extent are you satisfied with your participation in such events?

- absolutely satisfied – 50%
- rather satisfied – 50%

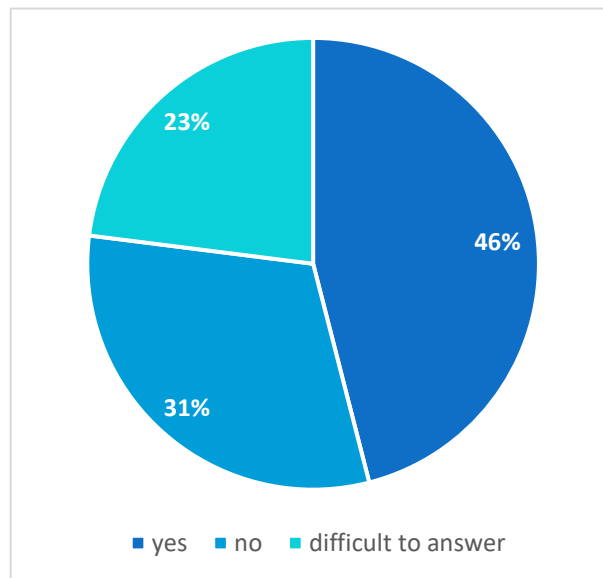
18. Do you think it is useful for your professional development to take part in events and activities which are organised by/at vocational education institutions?

- yes – 15%
- probably yes – 46%
- probably no – 23%
- no – 8%
- difficult to answer – 8%



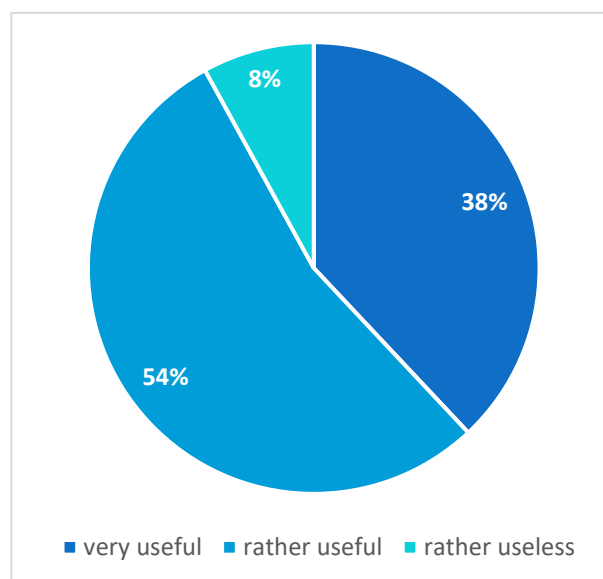
19. Do you have possibilities for professional communication and exchange with colleagues from vocational education institutions (during joint conferences, job fairs etc.)?

- yes – 46%
- no – 31%
- difficult to answer – 23%



20. Do you think it is useful to create a special online platform for such a professional exchange and communication?

- very useful – 38%
- rather useful – 54%
- rather useless – 8%

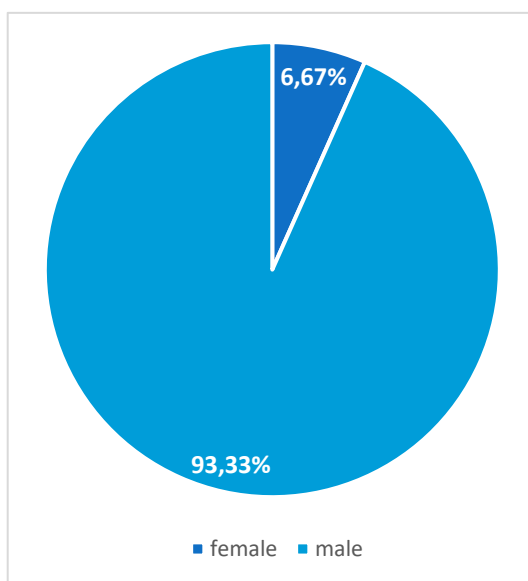


ANNEX II

THE SURVEY RESULTS OF STUDENTS WHO IS STUDYING IN THE SPECIALTY 015 "VOCATIONAL EDUCATION (TRANSPORT)" AT NTU

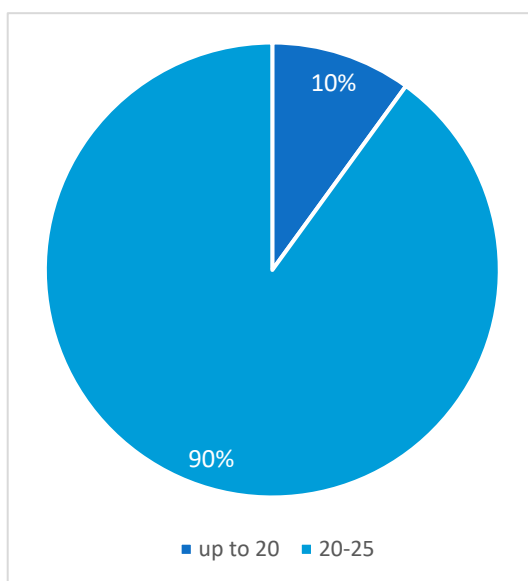
1. Your gender:

- female – 6,67%
- male – 93,33%



2. How old are you?

- up to 20 – 10%
- 20-25 – 90%



3. Where do you study?

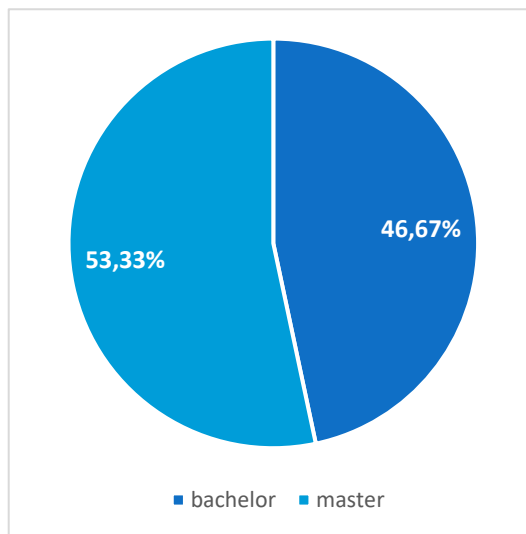
- National Transport University – 100%

4. Specialization of your study program:

- Transport– 100%

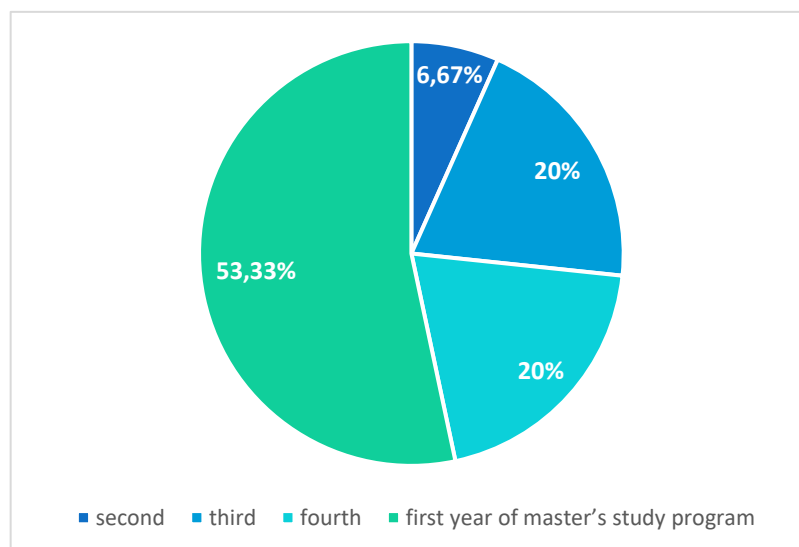
5. What is the educational level of the training program you are studying?

- bachelor – 46,67%
- master – 53,33%



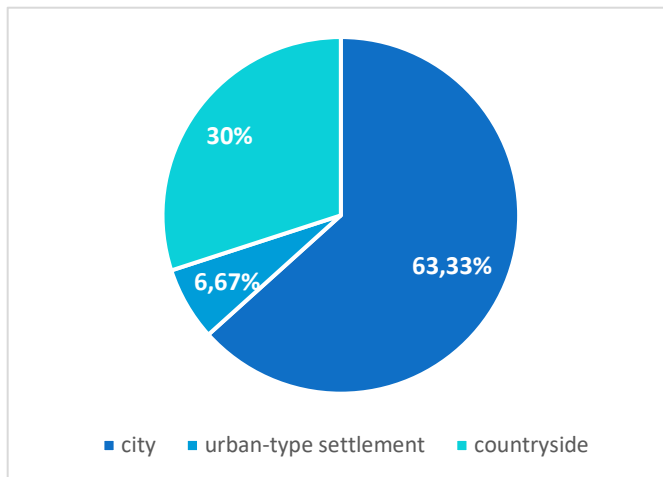
6. What is your study year?

- second – 6,67%
- third – 20%
- fourth – 20%
- first year of master's study program – 53,33%



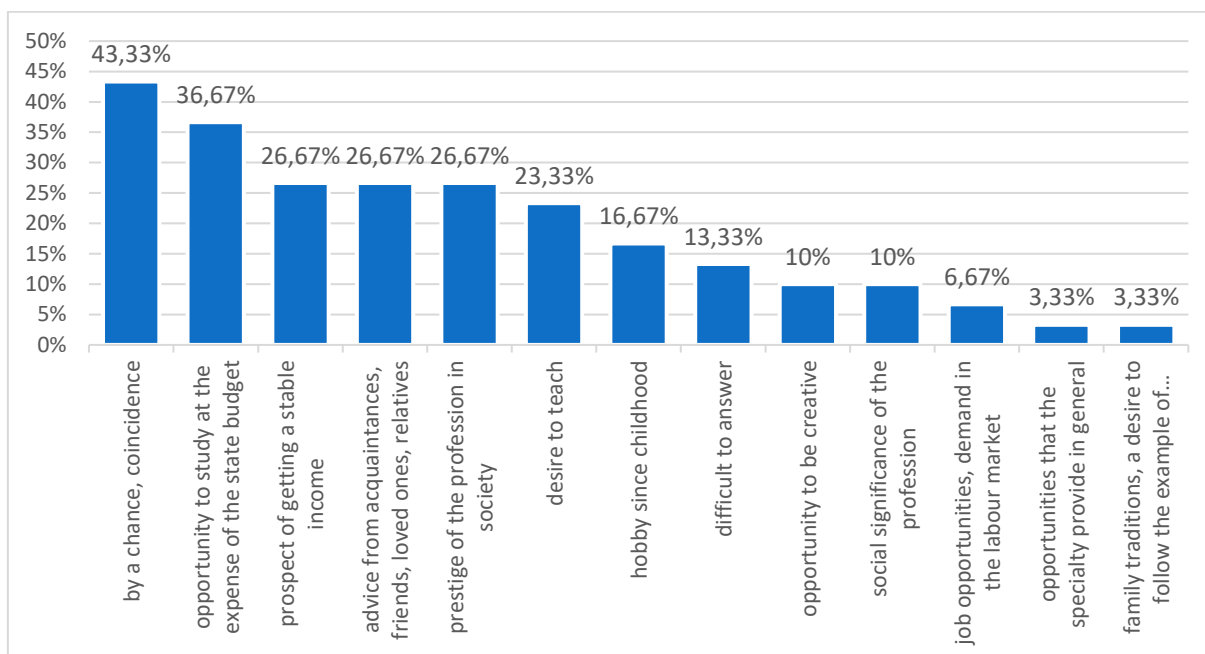
7. Which type of inhabited locality are you are from?

- city – 63,33%
- urban-type settlement – 6,67%
- countryside – 30%



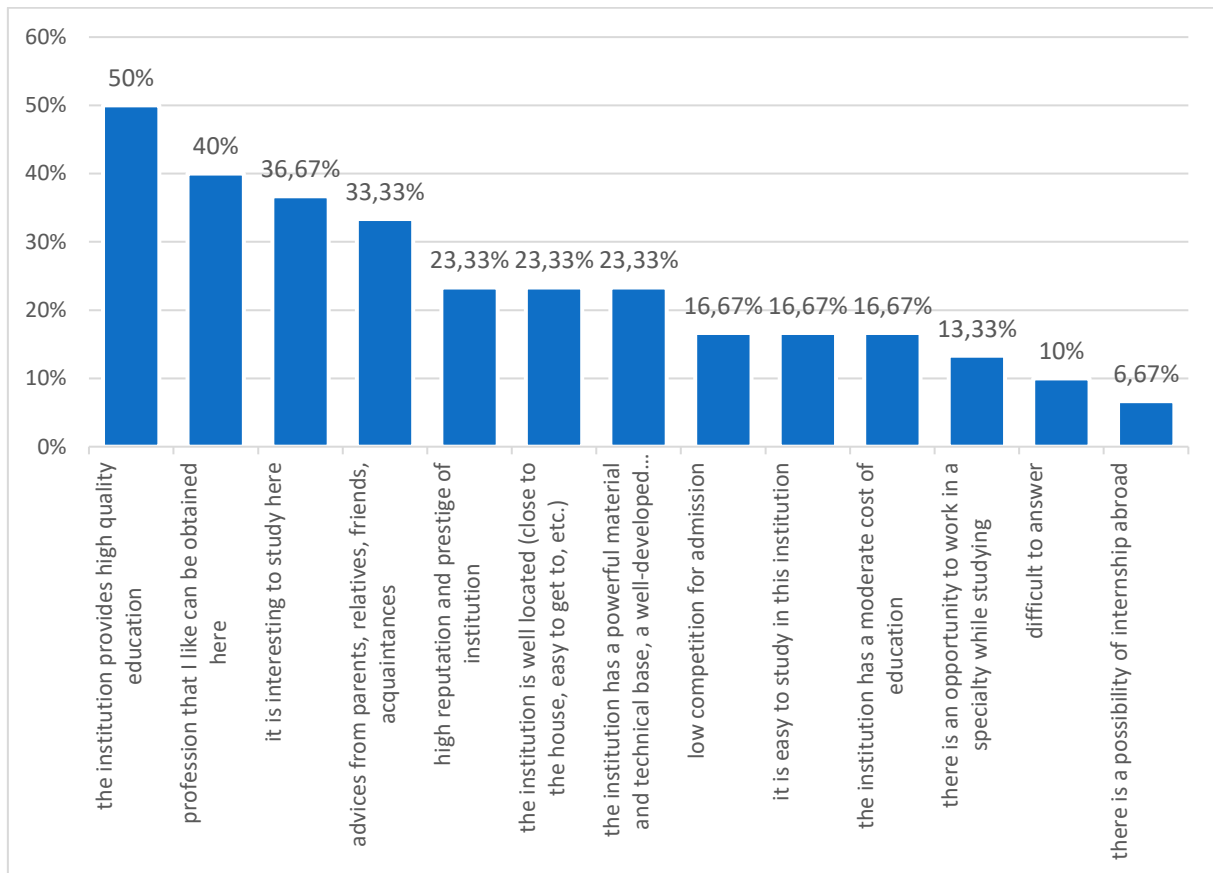
8. Why did you choose the specialty in which you are studying now? (up to 3 options are possible):

- by a chance, coincidence – 43,33%
- opportunity to study at the expense of the state budget – 36,67%
- prospect of getting a stable income – 26,67%
- advice from acquaintances, friends, loved ones, relatives – 26,67%
- prestige of the profession in society – 26,67%
- desire to teach – 23,33%
- hobby since childhood – 16,67%
- difficult to answer – 13,33%
- opportunity to be creative – 10%
- social significance of the profession – 10%
- job opportunities, demand in the labour market – 6,67%
- opportunities that the specialty provide in general – 3,33%
- family traditions, a desire to follow the example of parents or other relatives – 3,33%



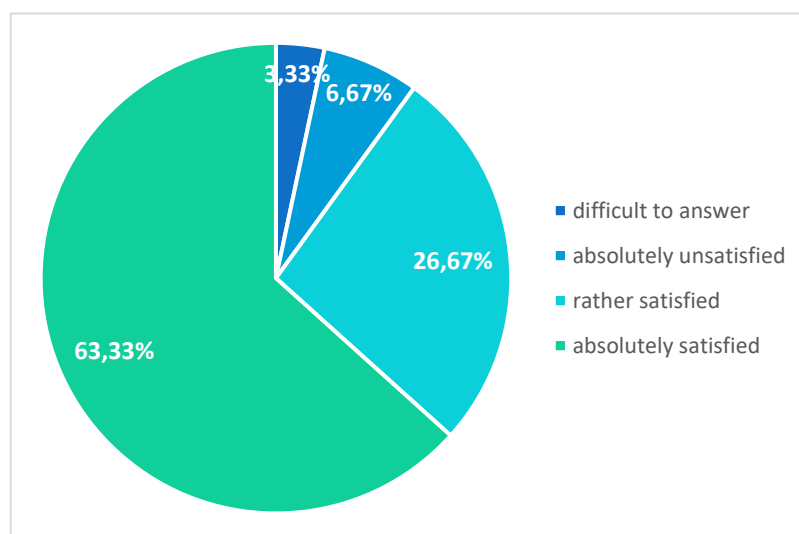
9. Why did you choose the educational institution where you are currently studying? (up to 5 options are possible)

- the institution provides high quality education – 50%
- profession that I like can be obtained here – 40%
- it is interesting to study here – 36,67%
- advices from parents, relatives, friends, acquaintances – 33,33%
- high reputation and prestige of institution – 23,33%
- the institution is well located (close to the house, easy to get to, etc.) – 23,33%
- the institution has a powerful material and technical base, a well-developed infrastructure (hostel, library, canteen, computer classes, etc.) – 23,33%
- low competition for admission – 16,67%
- it is easy to study in this institution – 16,67%
- the institution has a moderate cost of education – 16,67%
- there is an opportunity to work in a specialty while studying – 13,33%
- difficult to answer – 10%
- there is a possibility of internship abroad – 6,67%



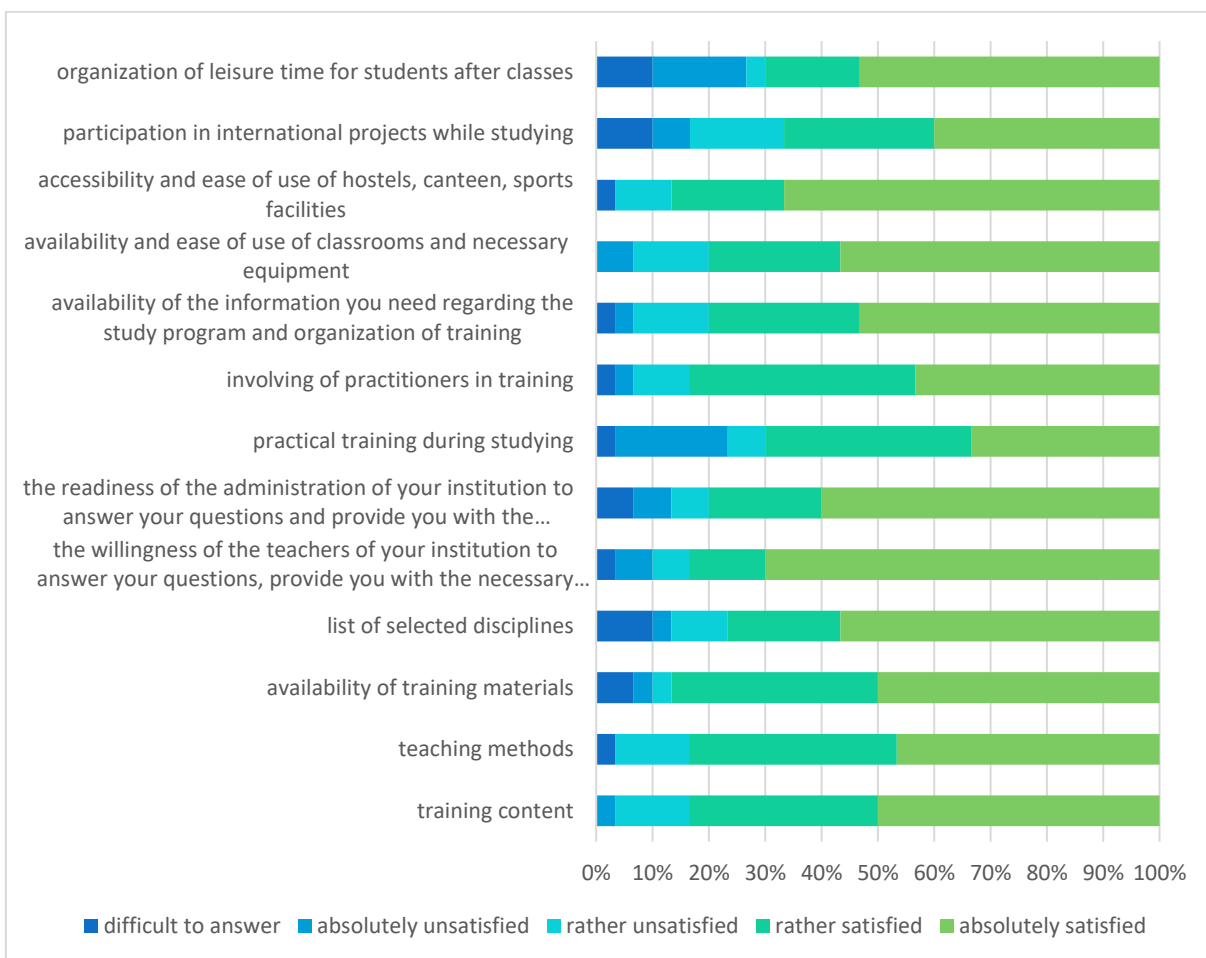
10. How satisfied are you with the studying at your institution in general?

- difficult to answer – 3,33%
- absolutely unsatisfied – 6,67%
- rather satisfied – 26,67%
- absolutely satisfied – 63,33%



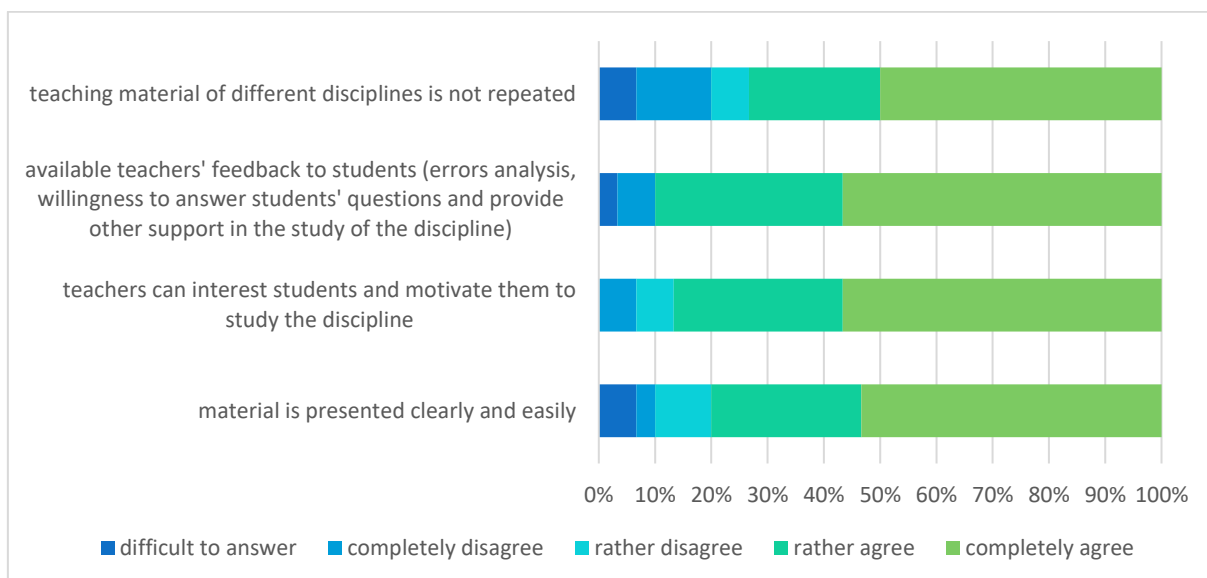
11. To which extent are you satisfied with training according to the following criteria

Criteria	difficult to answer	absolutely unsatisfied	rather unsatisfied	rather satisfied	absolutely satisfied
training content	0%	3,33%	13,33%	33,33%	50%
teaching methods	3,33%	0%	13,33%	36,67%	46,67%
availability of training materials	6,67%	3,33%	3,33%	36,67%	50%
list of selected disciplines	10%	3,33%	10%	20%	56,67%
the willingness of the teachers of your institution to answer your questions, provide you with the necessary support during training	3,33%	6,67%	6,67%	13,33%	70%
the readiness of the administration of your institution to answer your questions and provide you with the necessary support during training	6,67%	6,67%	6,67%	20%	60%
practical training during studying	3,33%	20%	6,67%	36,67%	33,33%
involving of practitioners in training	3,33%	3,33%	10%	40%	43,33%
availability of the information you need regarding the study program and organization of training	3,33%	3,33%	13,33%	26,67%	53,33%
availability and ease of use of classrooms and necessary equipment	0%	6,67%	13,33%	23,33%	56,67%
accessibility and ease of use of hostels, canteen, sports facilities	3,33%	0%	10%	20%	66,67%
participation in international projects while studying	10%	6,67%	16,67%	26,67%	40%
organization of leisure time for students after classes	10%	16,67%	3,33%	16,67%	53,33%



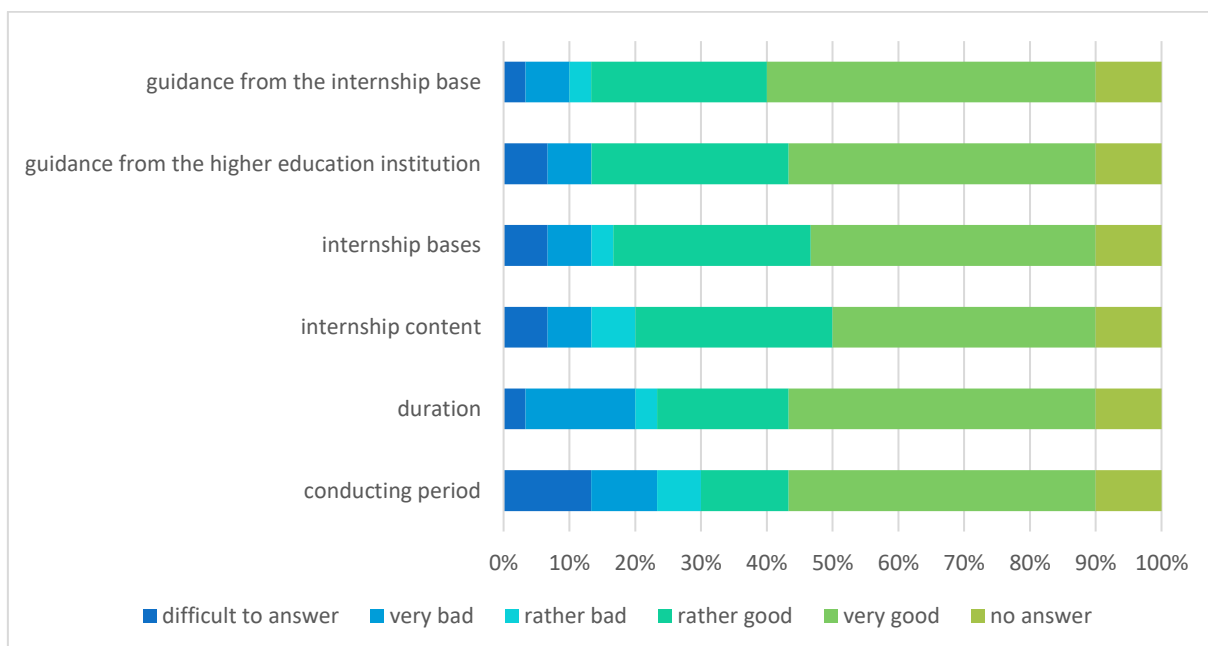
12. To which degree do you agree with such statements on teaching disciplines

Statements	difficult to answer	completely disagree	rather disagree	rather agree	completely agree
material is presented clearly and easily	6,67%	3,33%	10%	26,67%	53,33%
teachers can interest students and motivate them to study the discipline	0%	6,67%	6,67%	30%	56,67%
available teachers' feedback to students (errors analysis, willingness to answer students' questions and provide other support in the study of the discipline)	3,33%	6,67%	0%	33,33%	56,67%
teaching material of different disciplines is not repeated	6,67%	13,33%	6,67%	23,33%	50%



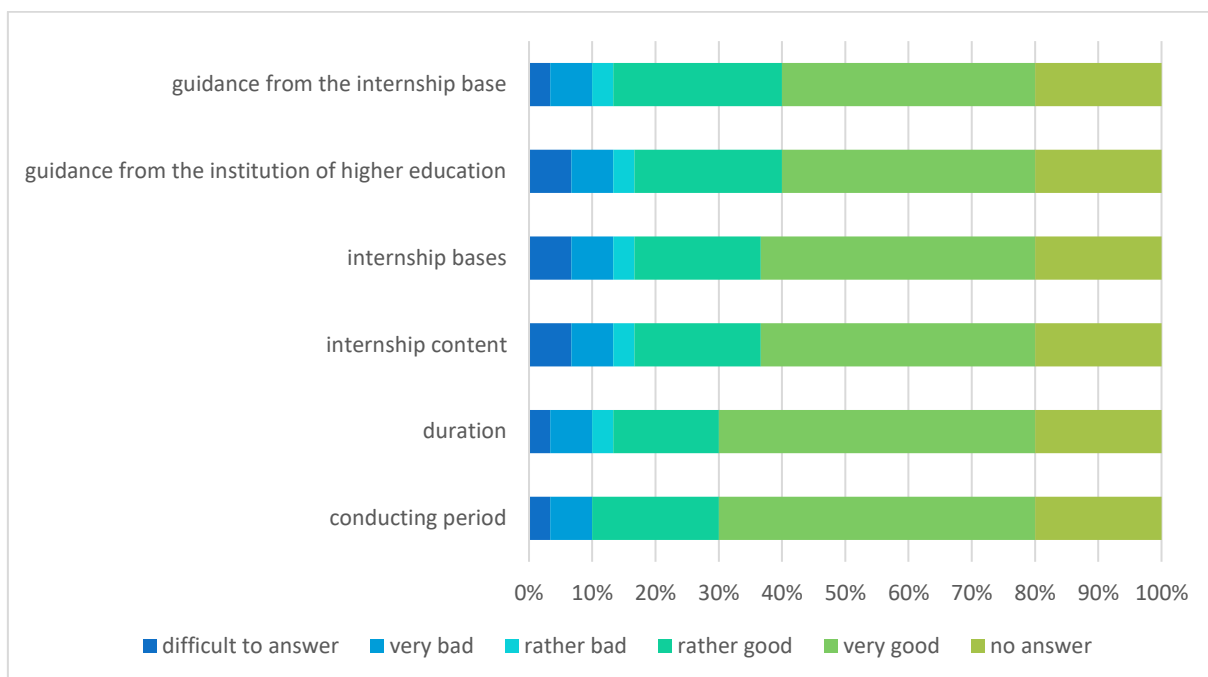
13. To which extent are you satisfied with the organization of educational (teaching) internship, if you have already taken it, according to such characteristics?

Characteristic	difficult to answer	very bad	rather bad	rather good	very good;	no answer
conducting period	13,33%	10%	6,67%	13,33%	46,67%	10%
duration	3,33%	16,67%	3,33%	20%	46,67%	10%
internship content	6,67%	6,67%	6,67%	30%	40%	10%
internship bases	6,67%	6,67%	3,33%	30%	43,33%	10%
guidance from the higher education institution	6,67%	6,67%	0%	30%	46,67%	10%
guidance from the internship base	3,33%	6,67%	3,33%	26,67%	50%	10%



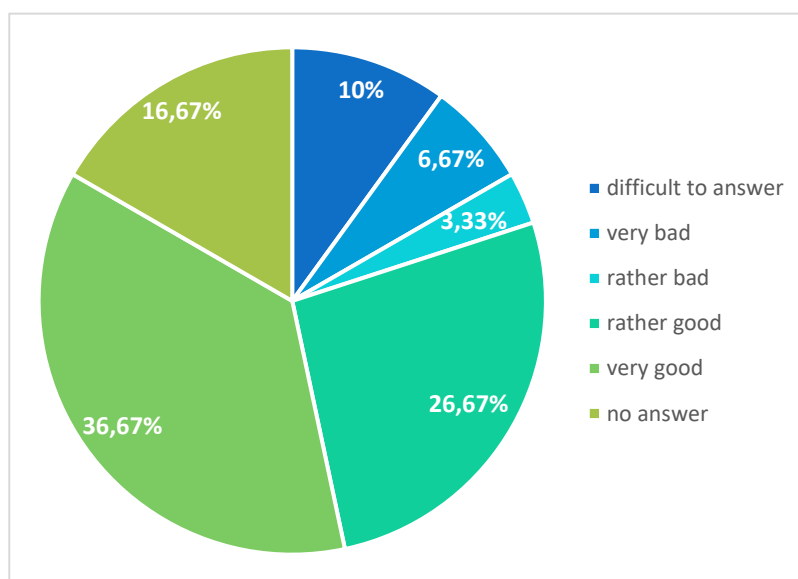
14. To which extent are you satisfied with the organization of practical internship at production (company/enterprise/ organisation etc.), if you have already passed it, according to such characteristics?

Characteristic	difficult to answer	very bad	rather bad	rather good	very good	no answer
conducting period	3,33%	6,67%	0%	20,00%	50%	20%
duration	3,33%	6,67%	3,33%	16,67%	50%	20%
internship content	6,67%	6,67%	3,33%	20%	43,33%	20%
internship bases	6,67%	6,67%	3,33%	20%	43,33%	20%
guidance from the institution of higher education	6,67%	6,67%	3,33%	23,33%	40%	20%
guidance from the internship base	3,33%	6,67%	3,33%	26,67%	40%	20%



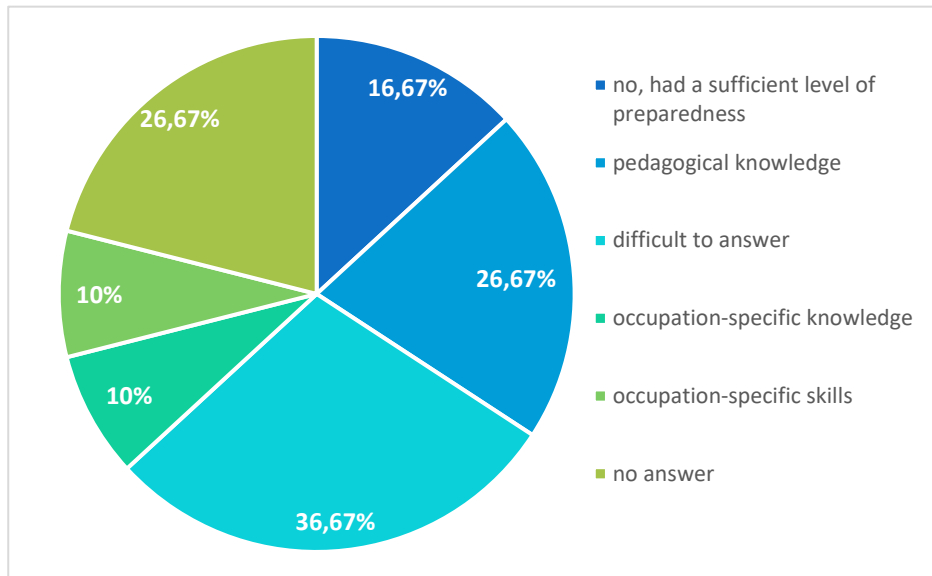
15. How do you evaluate your experience in conducting classes during educational internship, if you have any?

- difficult to answer – 10%
- very bad – 6,67%
- rather bad – 3,33%
- rather good – 26,67%
- very good – 36,67%
- no answer – 16,67%



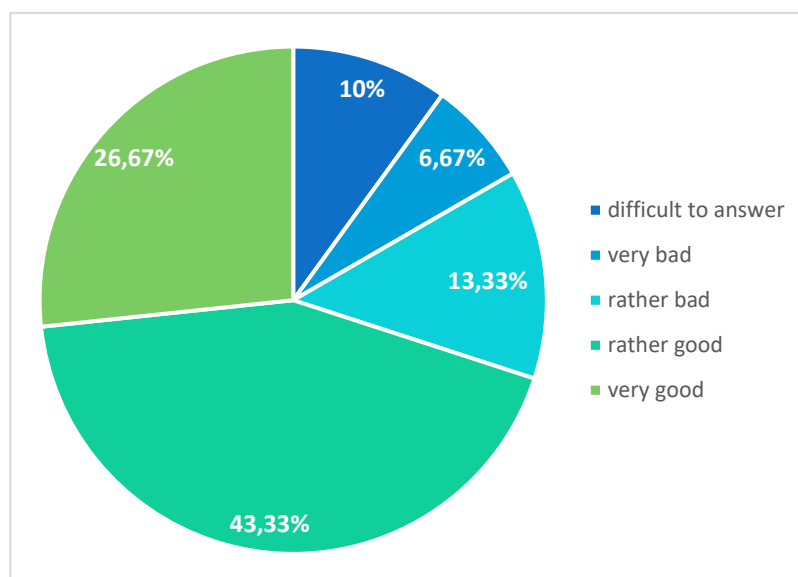
16. What knowledge and / or skills you lacked to conduct the classes properly?

- no, had a sufficient level of preparedness – 16,67%
- pedagogical knowledge – 26,67%
- difficult to answer – 36,67%
- occupation-specific knowledge – 10%
- occupation-specific skills – 10,00%
- no answer – 26,67%



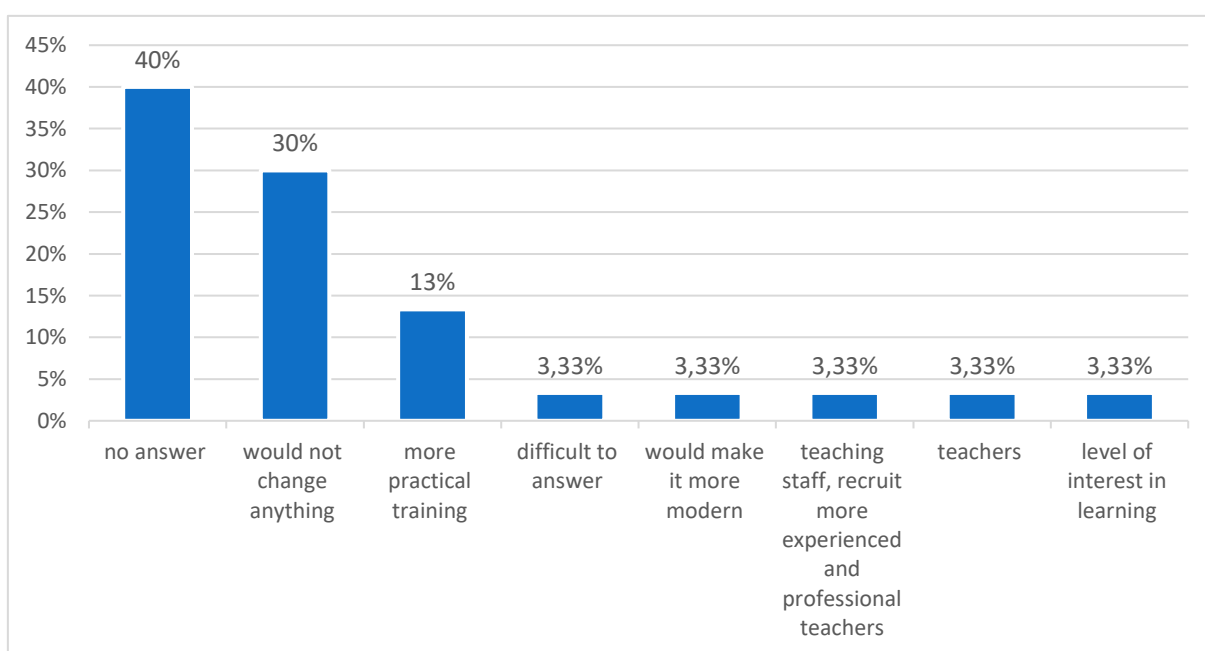
17. How prepared do you feel for conducting classes in vocational educational institutions?

- difficult to answer – 10%
- very bad – 6,67%
- rather bad – 13,33%
- rather good – 43,33%
- very good – 26,67%



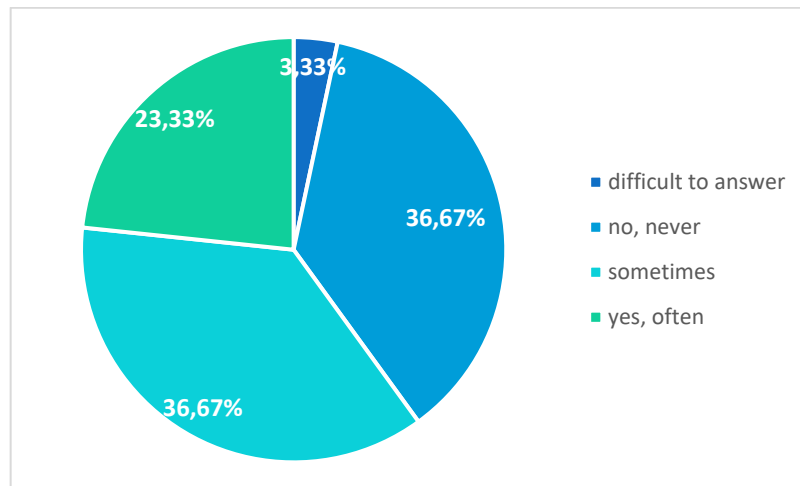
18. What would you change in professional training in your specialty?

- more practical training – 13,33%
- would not change anything – 30%
- no answer – 40%
- difficult to answer – 3,33%
- would make it more modern – 3,33%
- teaching staff, recruit more experienced and professional teachers – 3,33%
- teachers – 3,33%
- level of interest in learning – 3,33%



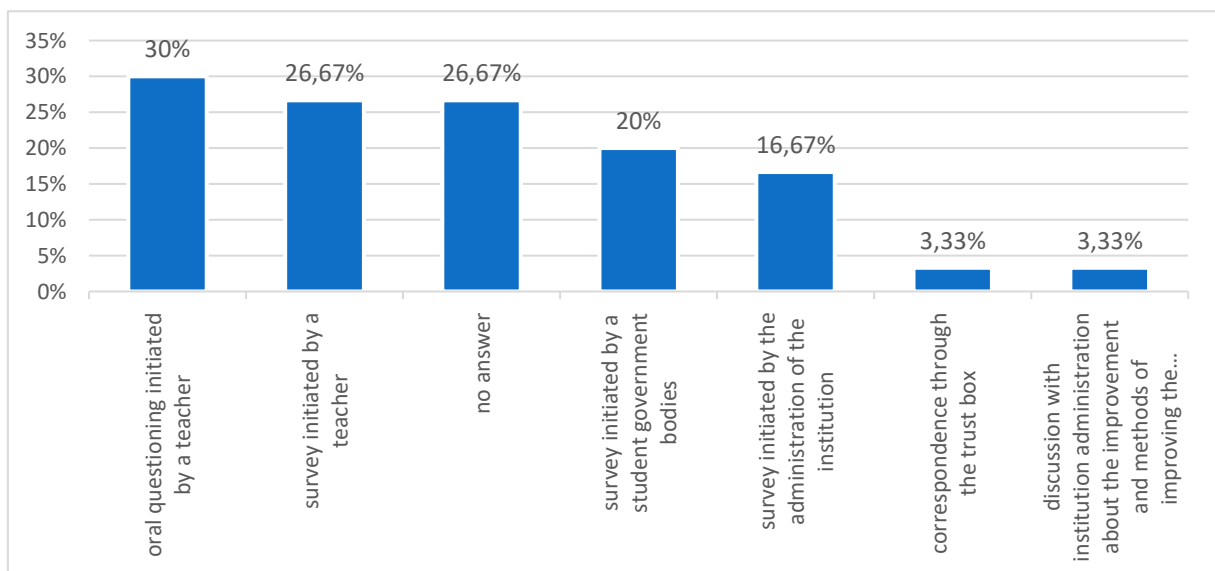
19. Have you been involved in the discussion of ways how to improve the organization of the educational process with teachers and the administration of the educational institution in which you are studying?

- difficult to answer – 3,33%
- no, never – 36,67%
- sometimes – 36,67%
- yes, often – 23,33%



20. If yes, in what forms did it take place?

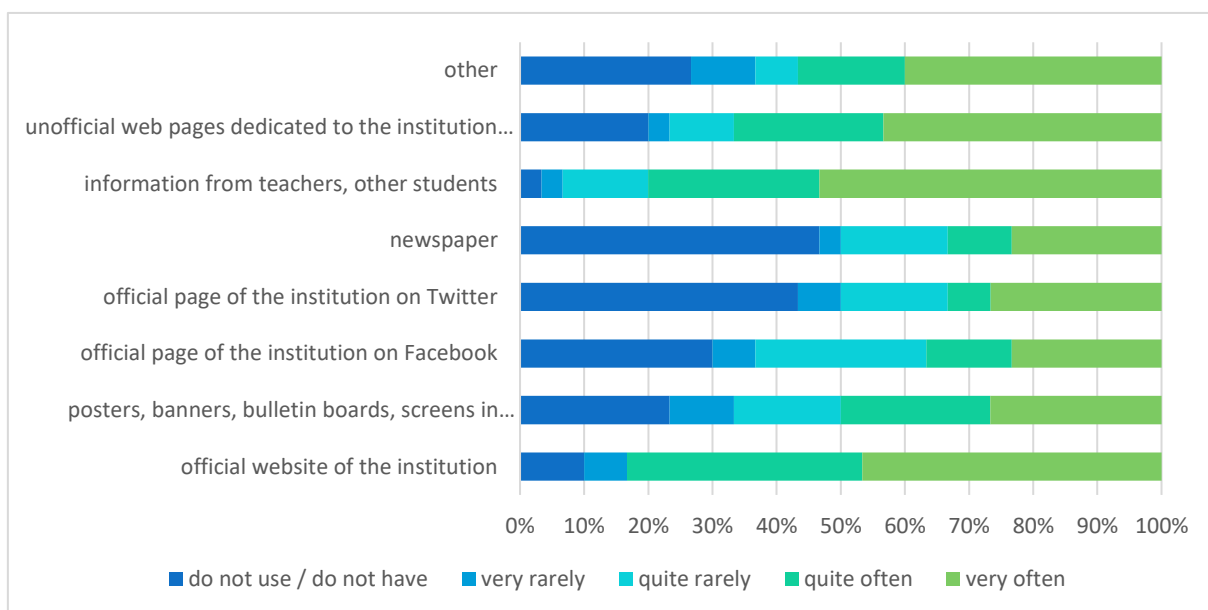
- survey initiated by the administration of the institution – 16,67%
- survey initiated by a teacher – 26,67%
- survey initiated by a student government bodies – 20%
- correspondence through the trust box – 3,33%
- discussion with institution administration about the improvement and methods of improving the educational institution in general – 3,33%
- oral questioning initiated by a teacher – 30%
- no answer – 26,67%



21. What sources of information about news and events at the university do you use and how often?

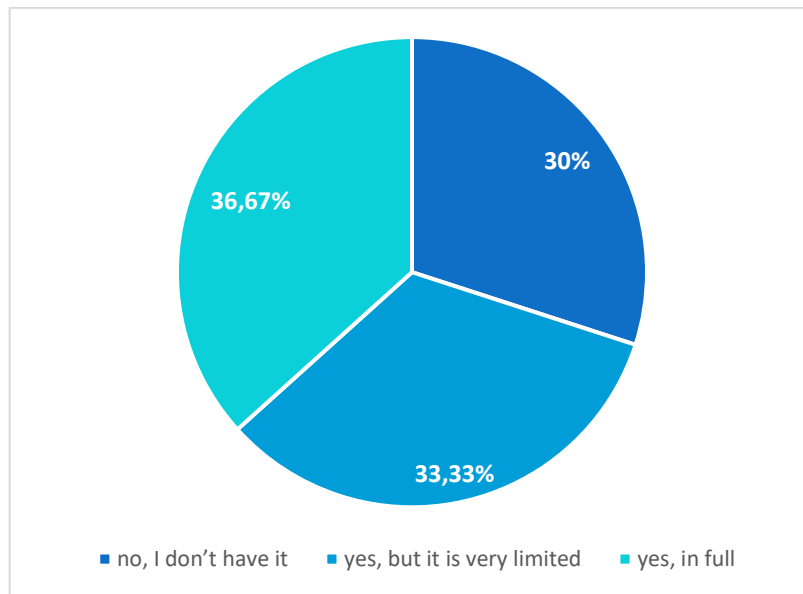
Source of information	do not use / do not have	very rarely	quite rarely	quite often	very often

official website of the institution	10%	6,67%	0%	36,67%	46,67%
posters, banners, bulletin boards, screens in educational buildings	23,33%	10%	16,67%	23,33%	26,67%
official page of the institution on Facebook	30%	6,67%	26,67%	13,33%	23,33%
official page of the institution on Twitter	43,33%	6,67%	16,67%	6,67%	26,67%
newspaper	46,67%	3,33%	16,67%	10%	23,33%
information from teachers, other students	3,33%	3,33%	13,33%	26,67%	53,33%
unofficial web pages dedicated to the institution and/or groups on social networks	20%	3,33%	10%	23,33%	43,33%
other	26,67%	10%	6,67%	16,67%	40%



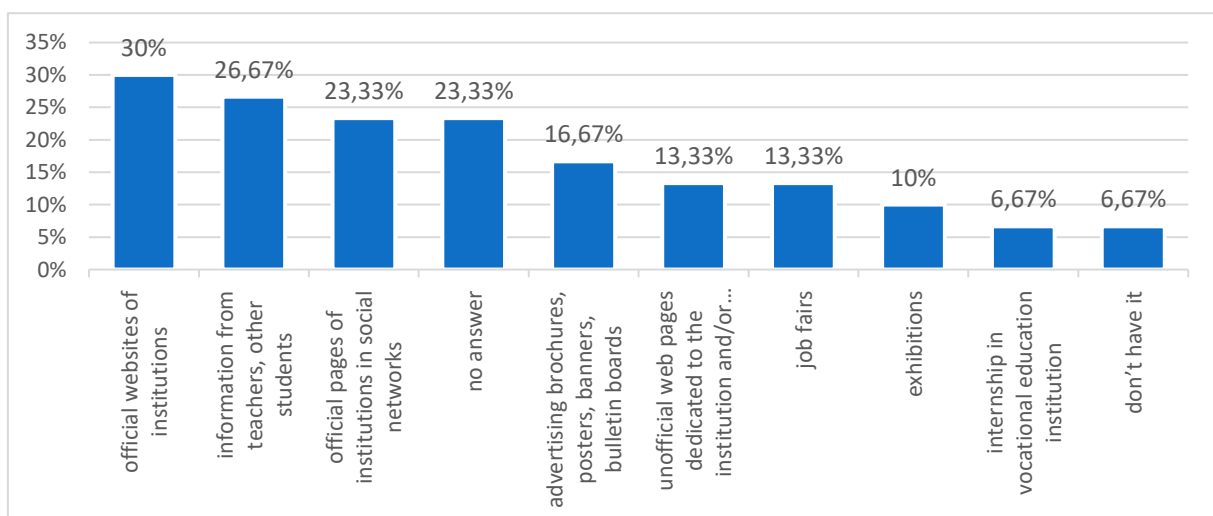
22. Do you have information about vocational education institutions where you can be employed after graduation?

- no, I don't have it – 30%
- yes, but it is very limited – 33,33%
- yes, in full – 36,67%



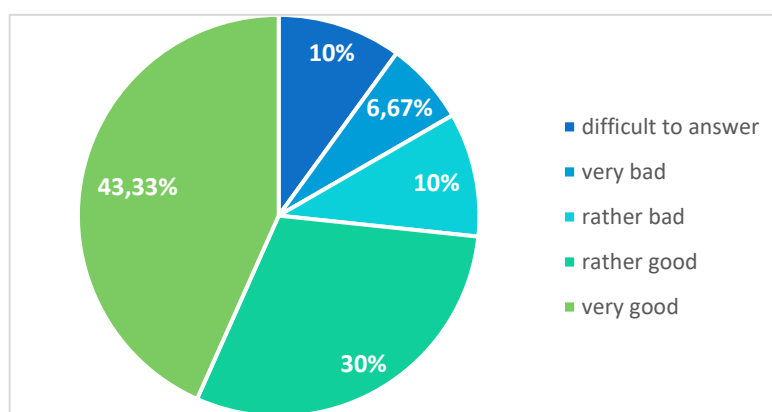
23. If yes, please indicate the sources of this information

- official websites of institutions – 30%
- official pages of institutions in social networks – 23,33%
- unofficial web pages dedicated to the institution and/or groups on social networks – 13,33%
- advertising brochures, posters, banners, bulletin boards – 16,67%
- information from teachers, other students – 26,67%
- internship in vocational education institution – 6,67%
- job fairs – 13,33%
- exhibitions – 10%
- don't have it – 6,67%
- no answer – 23,33%



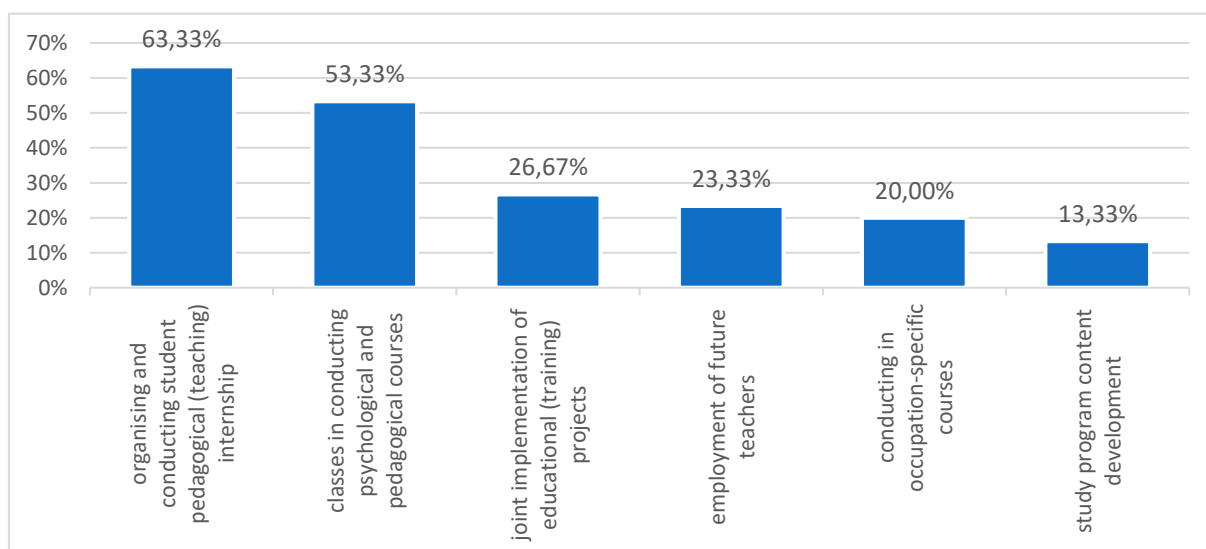
24. How would you rate the cooperation of your educational institution with vocational education institutions?

- difficult to answer – 10%
- very bad – 6,67%
- rather bad – 10%
- rather good – 30%
- very good – 43,33%



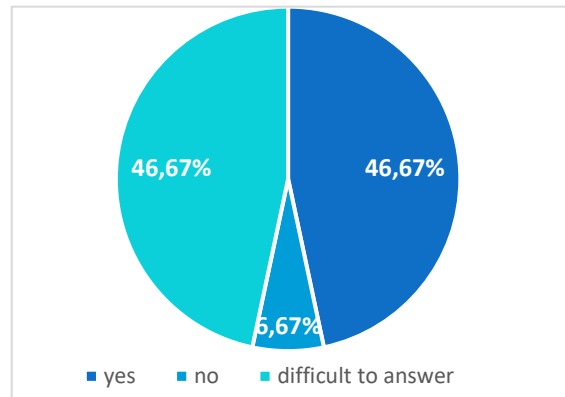
25. In what directions, in your opinion, is it advisable to develop cooperation between higher educational institutions that train vocational teachers and vocational education institutions?

- study program content development – 13,33%
- classes in conducting psychological and pedagogical courses – 53,33%
- conducting in occupation-specific courses – 20,00%
- organising and conducting student pedagogical (teaching) internship – 63,33%
- joint implementation of educational (training) projects – 26,67%
- employment of future teachers – 23,33%



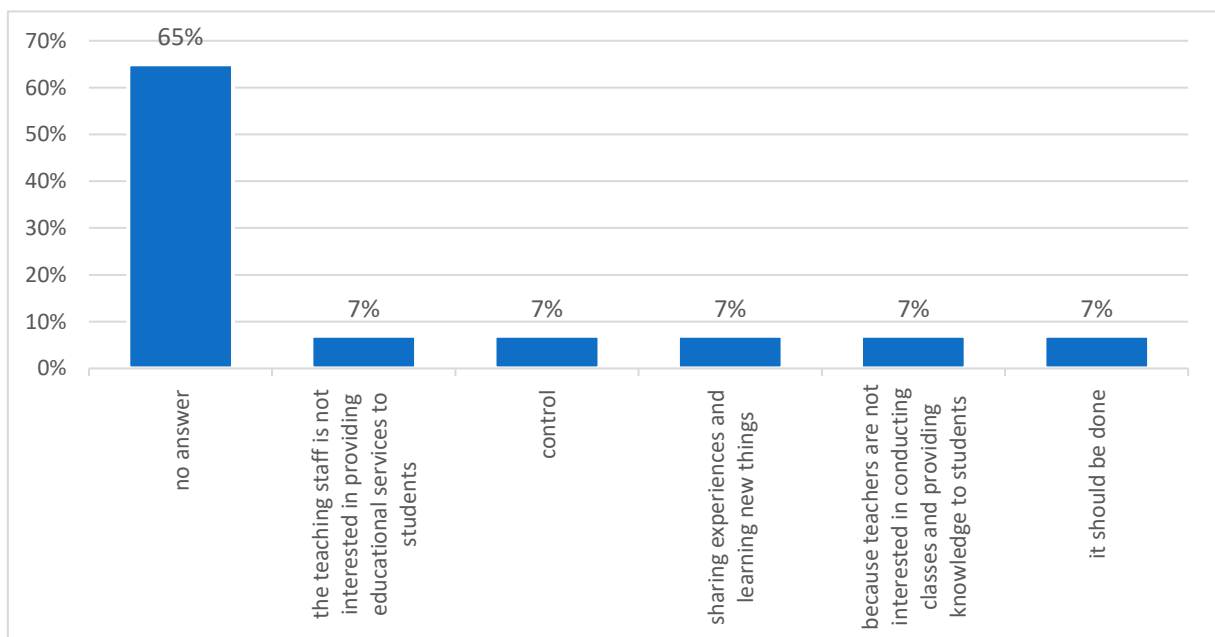
26. Do you consider it useful to involve vocational teachers in conducting practical training?

- yes – 46,67%
- no – 6,67%
- difficult to answer – 46,67%



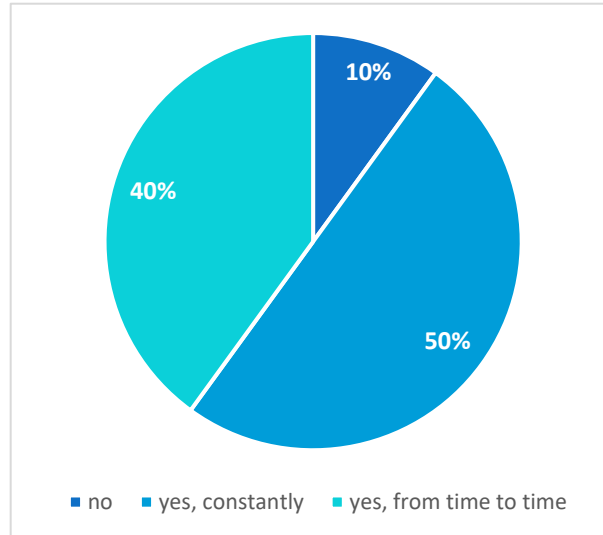
27. If you answered yes to the previous question, please explain why you think so?

- the teaching staff is not interested in providing educational services to students – 7%
- control – 7%
- sharing experiences and learning new things – 7%
- because teachers are not interested in conducting classes and providing knowledge to students – 7%
- it should be done – 7%
- no answer – 65%



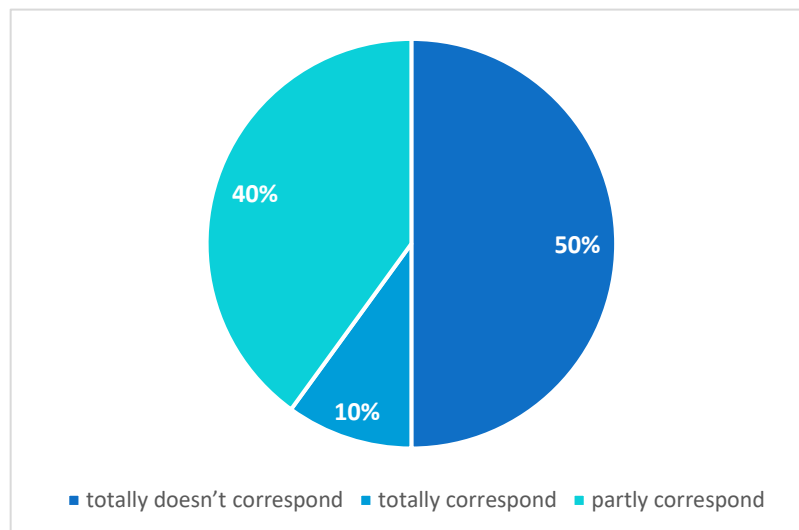
28. Do you combine study with a paid job?

- no – 10%
- yes, constantly – 50%
- yes, from time to time – 40%



29. If you have a paid job, to which extend does the work correspond to the specialty / study program, which you are studying in?

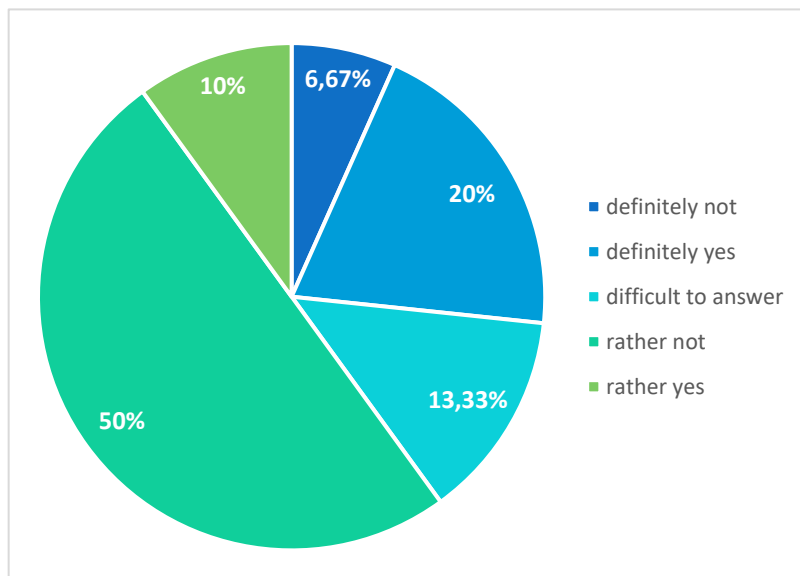
- totally doesn't correspond – 50%
- totally correspond – 10%
- partly correspond – 40%



30. Do you see yourself as a vocational teacher in future?

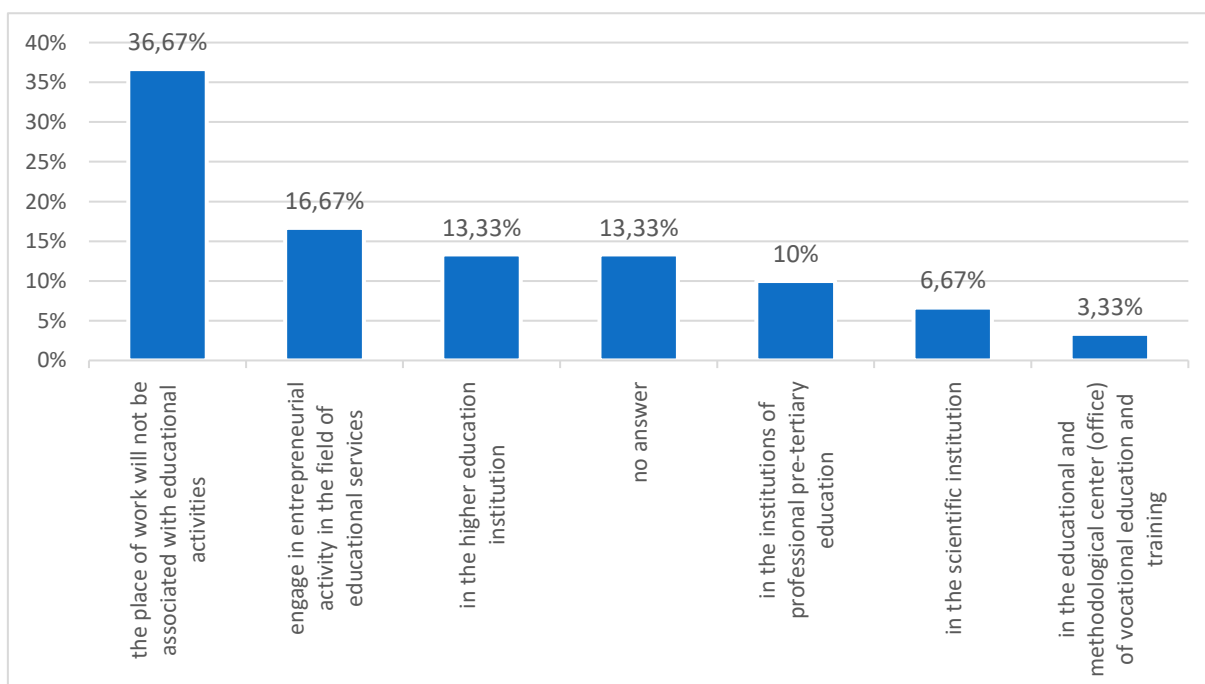
- definitely not – 6,67%
- definitely yes – 20%
- difficult to answer – 13,33%
- rather not – 50%

- rather yes – 10%



31. If not, where do you intend to work after graduation?

- engage in entrepreneurial activity in the field of educational services – 16,67%
- the place of work will not be associated with educational activities – 36,67%
- in the higher education institution – 13,33%
- in the institutions of professional pre-tertiary education – 10%
- in the educational and methodological center (office) of vocational education and training – 3,33%
- in the scientific institution – 6,67%
- no answer – 13,33%





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