



**Analysis of system of vocational teacher
education and its governance at
Ukrainian Engineering Pedagogics Academy
(UEPA)**

Institutional report



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CONTENTS

Acronyms	iv
Introduction	1
General characteristics of education and training of students of speciality "Vocational Education" at Ukrainian Engineering Pedagogics Academy (UEPA)	1
Analysis of the survey results of the research and teaching staff	3
Analysis of the results of the survey of students majoring in "Vocational Education"	13
General conclusions	27
References	29



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ACRONYMS

ECTS – European Credit Transfer System

EU – European Union

HEI – higher education institution

IGIP – Ingenieur-Gesellschaft für internationale Planungsaufgaben

UEPA – Ukrainian Engineering Pedagogics Academy

VET – vocational education and training

INTRODUCTION

Within the framework of the international project Erasmus+ "New governance mechanisms based on partnership and standardization of vocational education in Ukraine (PAGOSTE)" a survey was conducted to determine the current state of partnership of engineering and pedagogical education institutions with vocational education institutions in the realm of vocational teacher training. Conducting such a study will provide an opportunity to make adjustments to the management system of teacher training and propose new approaches to solving the problem of effective interaction between the two education systems: vocational and engineering-pedagogical. Two questionnaires were developed to collect information: to interview teachers and to interview students.

GENERAL CHARACTERISTICS OF EDUCATION AND TRAINING OF STUDENTS OF SPECIALITY "VOCATIONAL EDUCATION" AT UKRAINIAN ENGINEERING PEDAGOGICS ACADEMY (UEPA)

Vocational education dates back to the beginning of the 20th century. Its success depends on the development of sectors of the economy and the country's needs for skilled workers and employees.

The purpose of training VET teachers (teacher-engineers) is to form such technical and pedagogical basis of professional activity, which would be sufficient for organizing and conducting training of future qualified workers (employees) at the level of modern society requirements.

Ukrainian Engineering Pedagogics Academy (UEPA) is the leading State University in Ukraine that specializes in training teachers for the vocational education system of the speciality¹ "Vocational Education" in most of the well-known specializations:

- Vocational education. Power Engineering;
- Vocational education. Oil and Gas field;
- Vocational education. Labor protection;
- Vocational education. Metrology, standardization and certification;
- Vocational education. Electronics, radio engineering and telecommunications;
- Vocational education. Electrical engineering and electromechanics;
- Vocational education. Welding;
- Vocational education. Machinery engineering;
- Vocational education. Transport;
- Vocational education. Building;
- Vocational education. Publishing-printing industry;

¹ Speciality is a specific study program at higher education institutions in Ukraine, which leads to a Bachelor's or Master's degree in a specific occupational or scientific field.

- Vocational education. Computer technologies;
- Vocational education. Design;
- Vocational education. Technology of consumer goods manufacturing;
- Vocational education. Food technology;
- Vocational education. Economics;
- Vocational education. Services industry.

UEPA has implemented the type of VET teachers training by integrating pedagogical and technical components, starting from the first year and throughout the entire period of training.

This type differs from those when the technical or pedagogical component is dominant, and the other ones acts as a so-called superstructure.

So such education model has a number of distinctive features (Figure 1).

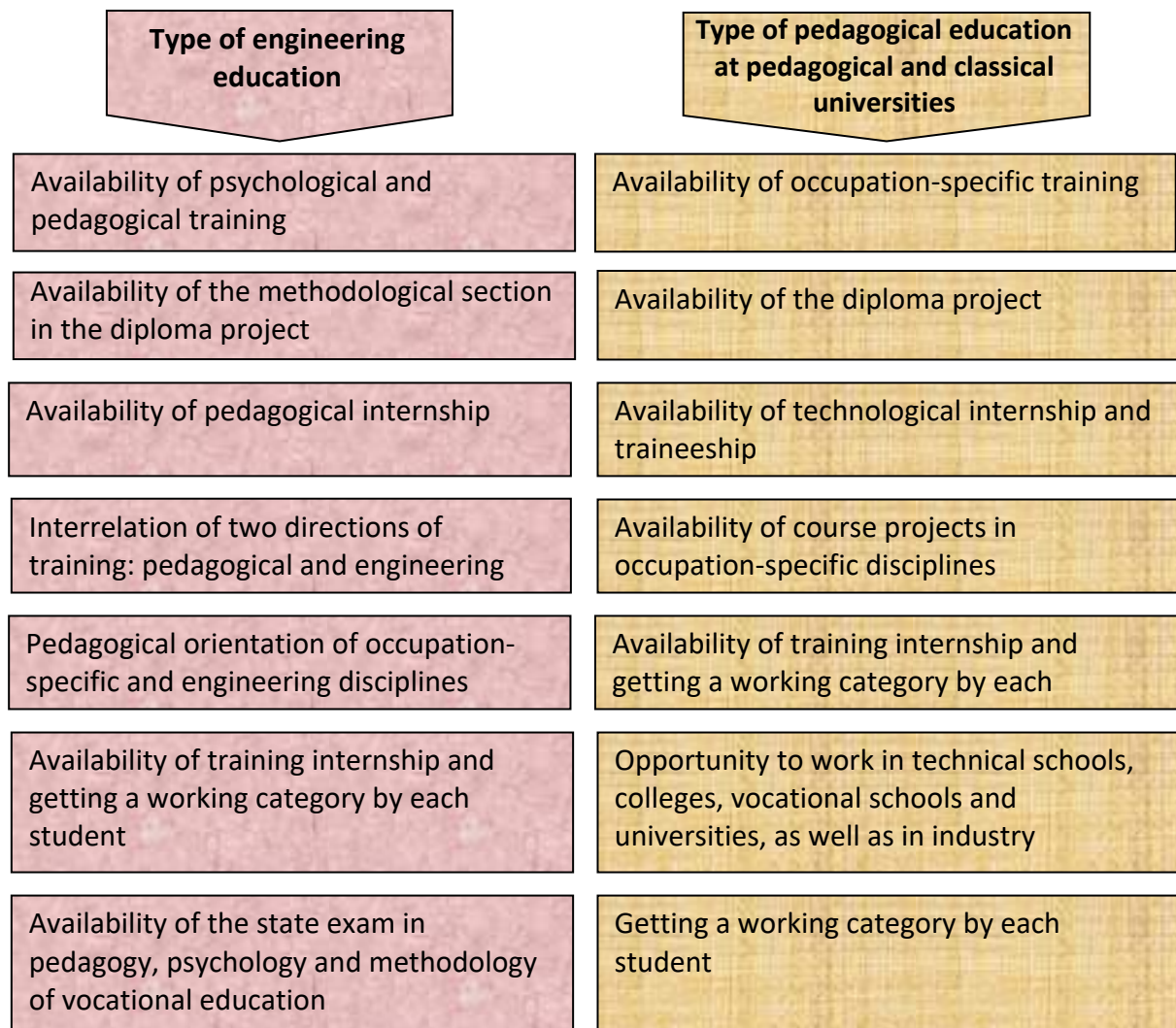


Figure 1. Distinctive features of VET teacher training model at UEPA

The pedagogical disciplines studied by students of engineering and pedagogical specialities are defined:

- methodological basis of vocational education;
- didactic basis of vocational education (course work);
- theory and methodology of educational work (course work);
- vocational training methodology (course work);
- communication technologies in teaching;
- innovative technologies in education (course work);
- education management, etc.

Students of UEPA have the opportunity to get a working category during the first two years of studying.

UEPA has bachelors and masters programs in full. Different forms of training are available: full-time, part-time and distance forms, dual education.

UEPA trains higher education teachers in the IGIP program, also UEPA can award candidate degrees (PhD) and doctors (Dr) degrees in pedagogical, economic and technical sciences. In addition, it is engaged in professional development of the teaching staff of the vocational education system.

Students who entered UEPA after higher vocational schools and having engineering and pedagogical education (bachelor and / or master degrees) return to these higher vocational schools as teachers of vocational education.

ANALYSIS OF THE SURVEY RESULTS OF THE RESEARCH AND TEACHING STAFF

113 research and teaching workers (higher education teachers) of Ukrainian Engineering Pedagogics Academy took part in the research. 71% of them are women and 29% are men. The age of 93% of the HEI staff who took part in the survey is over 30 years old. The percentage of the research and teaching staff from 10 to 20 years of experience is 38%, and the percentage of those with over 20 years of experience reaches 48%.

According to the positions held by the research and teaching staff, there is the following structure: teaching assistants – 10%, senior lecturers – 10%, associate professors – 62%, full professors – 9%, heads of Chairs – 9%.

The HEI staff who are responsible for specialised (vocational) training (occupation-specific courses) comprise 63%, 56% of whom have more than 10 years of experience; pedagogical training (pedagogical-psychological courses) – 15%, 12% of whom have more than 10 years of experience; general training (general introductory courses) – 35%, 10% of whom have more than 10 years of experience.

Specialisations of study programs, for which research and teaching staff provide training, are represented by various areas, such as: Metrology, standardisation and certification, Occupational safety, Design, Technology of light industry products, Computer technology,

Electrical engineering and electromechanics, Energy, Vocational education, Record and archive management, Management of intellectual property, Electronics, radio engineering and telecommunications, Oil and gas business, Economy, Publishing and printing business, Welding, Mechanical engineering, Service industry, Commodity research, Transport, Food technology, Educational, pedagogical sciences, Pedagogics, Construction.

Thus, it is possible to state that the sample of respondents selected for the study is quite representative and has all the properties of a full group of respondents relevant to the research objectives. The quality of the survey and the reliability of the obtained results were also checked. All the respondents filled in the answers of the questionnaire without leaving any unanswered questions, which indicates the interest of the respondents in the survey and their understanding of the feasibility and usefulness of the study, as well as the importance of their own contribution to the results. According to the results of the analysis of the completed questionnaires, there were no cases of contradictory answers. Verification of personal data was also performed on the basis of comparing the length of work experience of the respondents with their age and position. The inspection showed that the obtained data do not contain random values, the ratio of work experience with age and positions of respondents is properly observed (see Figure 2) showing the ratio of the number of positions held with regard to the work experience of the respondents).

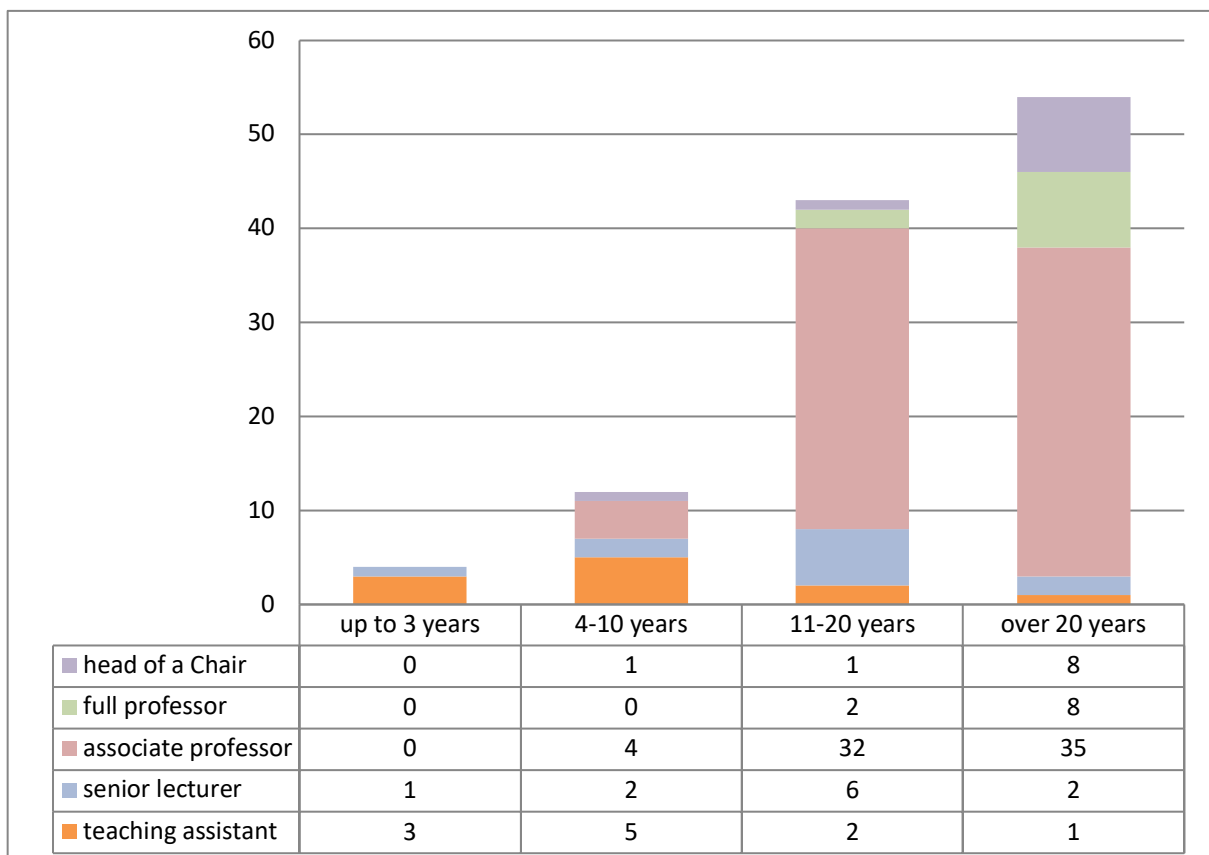


Figure 2. Ratio of the number of positions held with regard to the length of the respondents' work experience

Analysis of the respondents' answers to the questions related to the subject of the study shows the following situation. The first question clarified the list of partners with whom they work directly. Based on the results of the answers to this question, it was found that the following groups of partners can be distinguished by the level of cooperation:

- The first group consists of institutions with which HEI teachers actively cooperate (higher education institutions, vocational education institutions, enterprises, private entrepreneurs) and the level of cooperation with which is estimated ranging from 50 to 75%;
- The second group, which includes scientific institutions, educational and methodological centres of vocational education, professional associations (unions), the Ministry of Education and Science of Ukraine constitutes 15%, institutions of vocational higher education, employment centres, international organisations, institutions of postgraduate pedagogical education, is characterised by cooperation ranging from 10 to 25%;
- The third group of institutions with which the level of cooperation is close to zero comprises state and non-state funds, legislative and executive authorities.

It is necessary to pay attention to a rather low percentage of cooperation of the teaching professionals with scientific institutions – a little more than 20%. Apparently, this is due to the presence of certain problems in the scientific field. A serious drawback here is the division of science into academic, university-based and branch-oriented. In the activities of the Academy of Sciences of Ukraine, which is the main locomotive of scientific research, a number of serious problems have accumulated, for example, the focus on applied developments is accompanied by a decline in the prestige of fundamental research, with more than 90% of new technological developments not being implemented in the industry. The low level of funding has caused great difficulties in the logistics and staffing of research institutions. Thus, some institutions have lost 50-60% of their staff in recent years. Particular attention should also be drawn to a rather low percentage of cooperation with educational and methodological centres of vocational education (18%) and institutions of vocational pre-tertiary education (13%). The main purpose of educational and methodological centres of vocational education is to promote training of qualified workers by bringing the content of vocational education up to the level of modern requirements, implementing strategic objectives for vocational education in the region, and introducing new effective learning technologies. Therefore, attention should be paid to ensuring closer cooperation of teaching professionals with these institutions. With regard to cooperation with institutions of vocational pre-tertiary education, it should be noted that currently in almost eight hundred Ukrainian colleges and technical schools there are about four hundred thousand students and up to forty-five thousand teachers. The powerful system annually trains more than a hundred thousand mid-level professionals, many of whom immediately start working, and

many continue their studies at the bachelor's degree. Therefore, it is necessary to increase the amount of cooperation in this direction as well [1].

The distribution of the level of cooperation of the teaching professionals, by different sections, was also analysed. Figure 3 shows the distribution of the amount of cooperation between higher education teaching staff and their partners depending on the positions held by the teaching staff.

The analysis of responses regarding the cooperation of UEPA with vocational education institutions indicates a generally positive trend. That is, almost all teachers are satisfied with such cooperation (see Figure 4), cooperation is absolutely satisfactory (66%), rather satisfactory (28%), rather unsatisfactory (2%), unsatisfactory (1%), difficult to answer (3%) (see Figure 4).

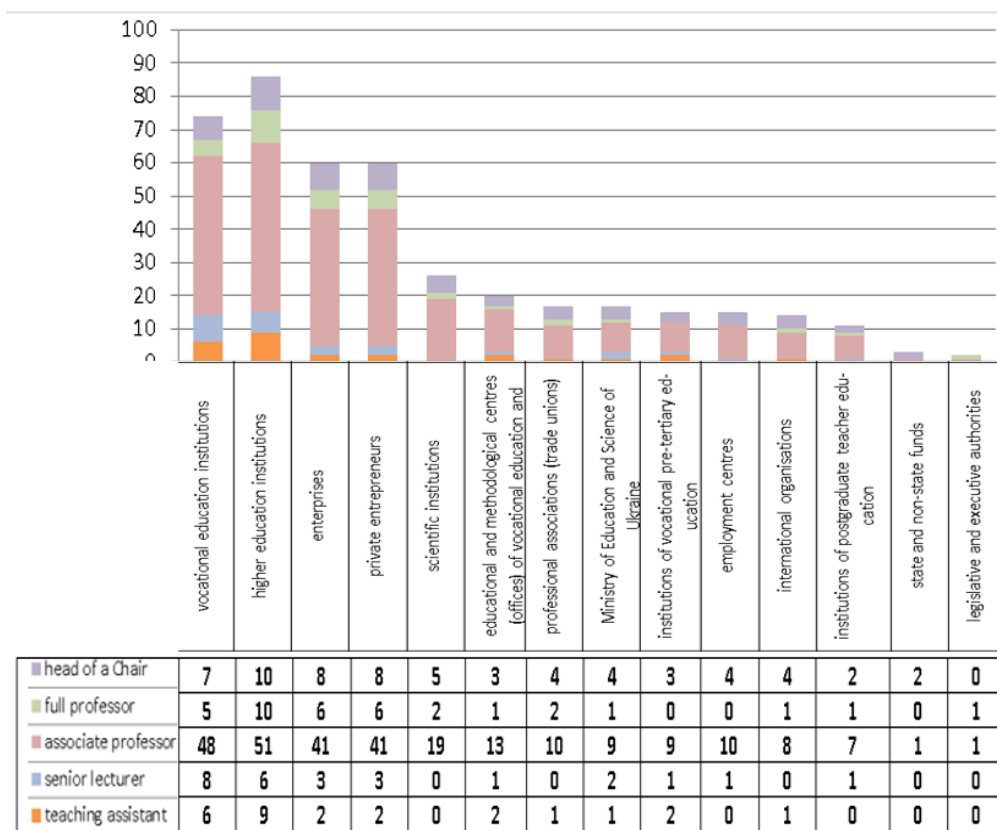


Figure 3. Distribution of cooperation with partners depending on the positions held by the teaching staff

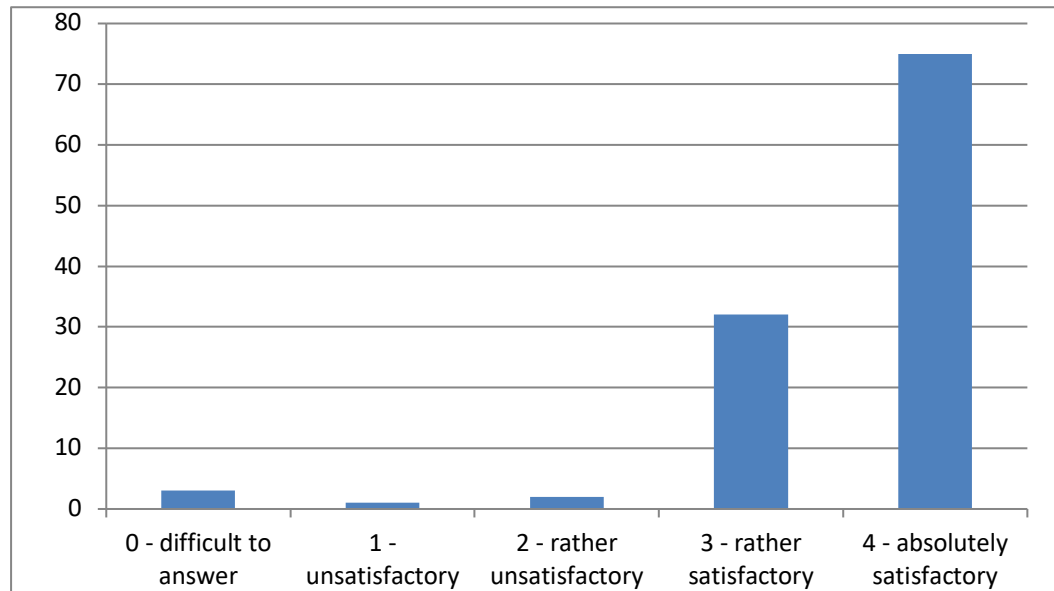


Figure 4. Results of evaluation of cooperation of higher education institutions with vocational education institutions

It was interesting to find out how the teaching staff evaluate the cooperation of the academy with the institutions of vocational education in certain areas. In the next question, the respondents assessed cooperation in nine areas. The evaluation was carried out at five levels, namely: 0 – difficult to answer, 1 – satisfactory, 2 – good, 3 – very good, 4 – excellent. We analysed positive evaluations of cooperation (answers with scores of 3 – very good and 4 – excellent) and, as in the case of cooperation of higher education teachers with different institutions, identified three groups of areas of cooperation with vocational education institutions. The first group includes three areas of cooperation: organising and conducting pedagogical (teaching) internships of students, career guidance work and organising activities for teacher training and retraining (estimated level of cooperation is about 95%). The second group includes the following areas: development of the content of study programs and study modules, conducting classes in pedagogical disciplines, conducting classes in vocational training disciplines (specific occupational courses), joint implementation of educational (training) projects, joint activities (estimated level of cooperation is about 85%). And the third group with an estimate of 76% included only one area, which is employment of future teachers.

In general, it is possible to note rather high evaluations in specific areas of cooperation with vocational education institutions, but it is necessary to pay attention to certain evaluation positions. First, the lowest score was given by the teaching staff to the field of cooperation "Employment of future teachers" – 76%. Apparently, this is quite logical, because traditionally the possibility of employment in vocational education institutions is considered by graduates as just an alternative and they are in no hurry to become teachers at these institutions. One of the highest marks is set in the direction of cooperation "Career guidance work", which is 96%. HEI teachers communicate with students of vocational education

institutions, and with their teachers, but it should be noted such communication is not quite efficient, as the number of entrants enrolled in the academy from these institutions is insignificant.

In the next question, the respondents were asked to assess the usefulness of forms of organising cooperation with the academy mentioned in the previous question. That is, if in the previous question the teaching staff assessed how the academy cooperates with vocational education institutions in certain areas, then in this question they assessed whether such cooperation is needed at all. In this case, the distribution of positive assessments in certain areas of cooperation with vocational education institutions is slightly different. The lowest percentage of positive assessments was received in two areas: conducting classes in the disciplines of vocational training and conducting classes in pedagogical disciplines (88% of positive assessments in each area). The usefulness of all other areas of cooperation was assessed by teachers with quite high scores: from 91% of positive assessments to 96%.

A comparative analysis of assessments of the state and usefulness of cooperation with vocational education institutions in these areas showed that the HEI academic staff are undoubtedly convinced that cooperation with them is necessary and promising and it needs constant support. Figure 5 presents in pairs the results of answers to questions about the state and usefulness of cooperation with vocational education institutions. The data are given in the absolute number of HEI teachers. The discrepancy between the highest assessments of the state and usefulness is mainly within 10%, and only two positions, which are "Joint implementation of educational (training) projects" and "Employment of future teachers", have a discrepancy of about 30%. Therefore, it is necessary to pay attention to the state of cooperation with vocational education institutions in these areas.

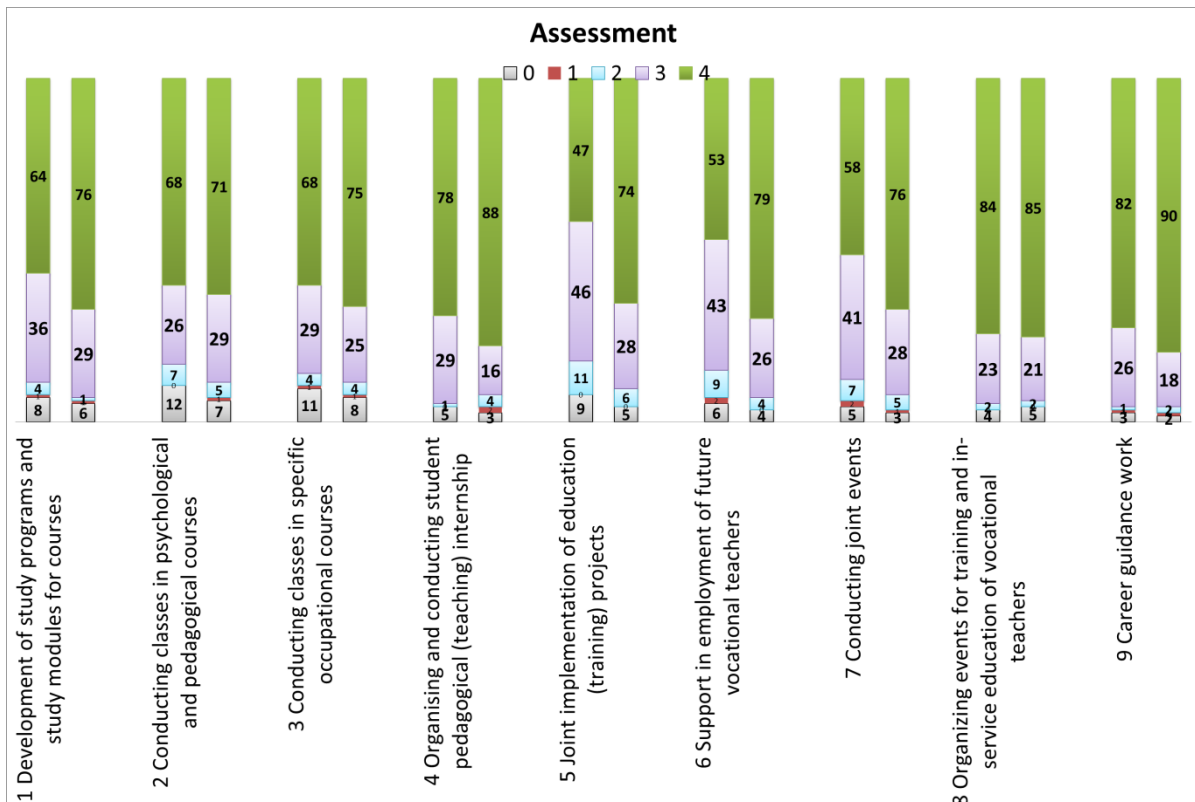


Figure 5. Results of answers to questions about the state and usefulness of cooperation with vocational education institutions

It was interesting to find out how exactly the HEI teachers at UEPA evaluate the possibility of cooperation with vocational education institutions in terms of conducting classes. It is necessary to remember that the usefulness of involving higher education teaching professionals in teaching vocational training disciplines (occupation-specific courses) and pedagogical disciplines in vocational education institutions was positively estimated by 88% of the respondents. As for the usefulness of involving teachers of vocational education institutions in conducting classes in higher education institutions, the opinions were not so unanimous. 41% of the respondents consider it useful to involve teachers of vocational education institutions, while 36% of the respondents find it difficult to answer, and 23% of them do not consider it feasible. This distribution of answers may be explained by the fact that now the workload in higher education institutions has significantly decreased and there is no additional workload to additionally involve VET teachers.

The usefulness of involving teachers of higher education institutions in conducting classes in vocational educational institutions was assessed as follows: 65% of the respondents gave an affirmative answer, 28% of them found it difficult to answer, while only 7% of them opted for “no, it is not useful”. The obtained data show that it is definitely useful to involve HEIS academic staff in conducting classes at vocational education institutions because, firstly, the higher education teaching professionals have experience in combining scientific and educational areas of work, which is definitely necessary for today's rapid development of

both technology and equipment; secondly, the majority of vocational education graduates plan to enter HEIs, so HEI teachers can and have the opportunity to prepare students for the successful completion of the external independent evaluation (ZNO). Figure 6 shows the distribution of answers depending on the cycle of disciplines taught by the respondents. A more positive assessment was given by the teaching professionals that teach specialised training disciplines (occupation-specific courses).

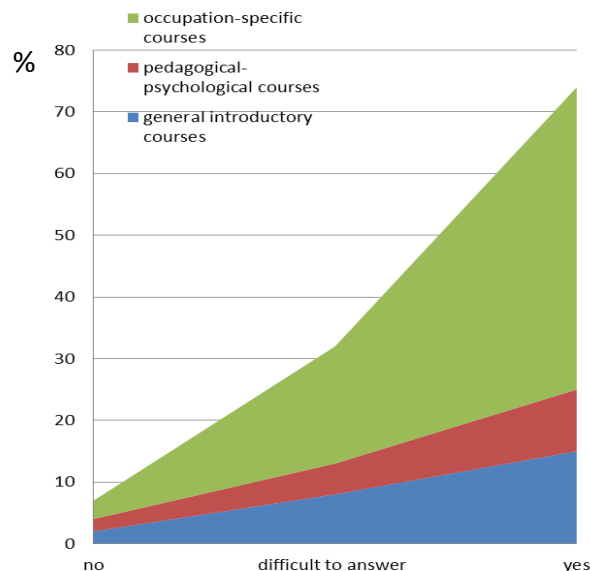


Figure 6. Distribution of answers to questions regarding the involvement of HEI teachers in conducting classes at vocational education institutions depending on the cycle of disciplines taught by the respondents

A separate group of questions was aimed at clarifying the attitude of the respondents to the development of their professional and pedagogical competences in general and the role of vocational education institutions in it in particular. 88% of the respondents consider it necessary to continuously develop their professional and pedagogical competences. Almost all of them constantly develop their professional and pedagogical competence through internships, advanced trainings, participation in various scientific and methodological events.

With regard to participation in advanced training events held at/by vocational education institutions, 30% of the respondents confirmed their participation in these activities, but almost two thirds of them negatively assessed such participation. That high percentage of negative responses is explained by the fact that such advanced training events are scarce and higher education teachers are not informed about them. Amongst the advanced training events held at/by vocational education institutions, the most visited ones are conferences, methodological seminars, and workshops (master-classes) (see Table 1).

Table 1. Results of answers to the question about participation in advanced training activities conducted on the basis of vocational education institutions

Number of answers	% of answers	Advanced training events
23	20%	conferences
18	16%	methodological seminars
12	11%	workshops (master-classes)
11	10%	round-table discussions
7	6%	training courses
1	0,5%	internships
1	0,5%	pedagogical (teaching) internships

According to the logic of the survey, the answer to this question should have been given by 30% of respondents (see the results of the answer to the previous question). Apparently, this discrepancy in the answers is due to the fact that here all the possible advanced training events are listed, but in the previous question only those higher education teachers who did an advanced training course and were credited gave a positive answer.

Regarding the level of how much higher education teachers are satisfied with participation in such events, only 32% of the respondents (28% are completely satisfied and 4% are rather satisfied) gave a positive answer. This indicates that the level of these events needs to be significantly increased and higher education teachers should also be involved in solving this issue. This conclusion is confirmed by the answers of the respondents to the question "Do you consider it appropriate for the development of your professional competence to participate in activities held at/by vocational education institutions?" Almost all respondents gave a positive assessment of the appropriateness of developing professional competence through participation in activities held at/by vocational education institutions. Thus, it is necessary to pay attention once again to the need to increase the level of such activities in vocational education institutions.

At the end of the survey, the respondents were asked to answer questions about the interaction of HEI teachers with vocational teachers and ways to solve problems of such professional communication. The results of the survey showed that 71% of higher education teachers have the opportunity to constantly communicate on professional issues with colleagues from vocational education institutions (within joint conferences, job fairs, etc.). The vast majority of the teaching professionals who do not have such an opportunity have very little work experience. Figure 6 shows the distribution of answers to this question depending on the cycle of disciplines taught by the respondents. Those higher education teachers, who teach specialised disciplines, have more opportunities for constant professional communication with colleagues from vocational education institutions, which is

quite logical in terms of the professional orientation of the educational process in vocational education institutions.

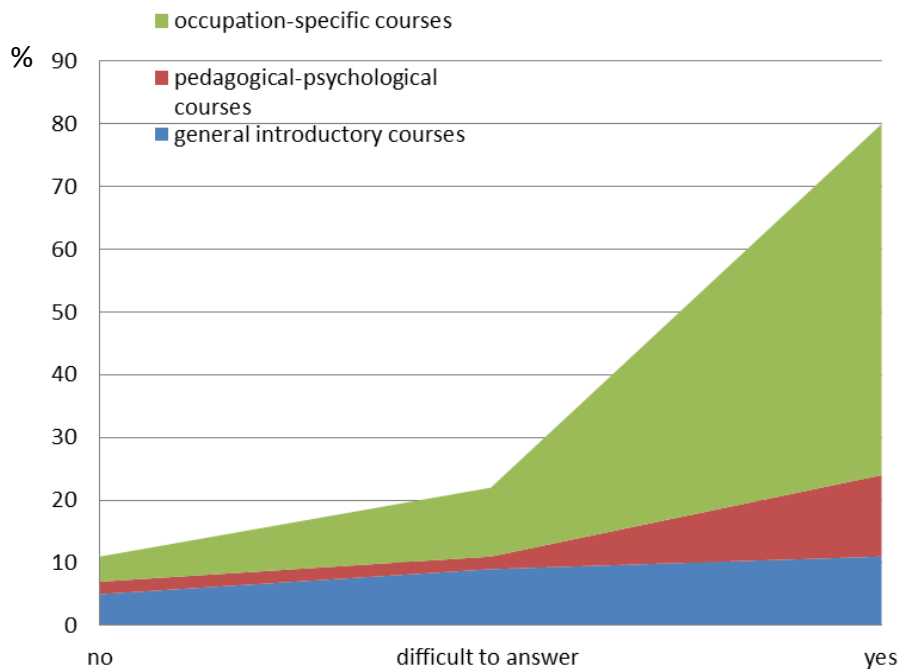


Figure 7. Distribution of answers to questions about opportunities for constant communication regarding professional issues with colleagues from the institutions of vocational education depending on the cycle of disciplines taught by the respondents

Given the fact that almost 30% of the research and teaching staff of the academy do not have opportunities for professional communication with colleagues from vocational education institutions, it is necessary, firstly, to develop various forms of cooperation between HEIs and vocational education institutions and, secondly, to provide the research and teaching staff of the academy with maximum access to participation in the joint events such as conferences, methodological seminars, vacancy fairs, open days, etc.

One of the ways to solve the problem of professional communication between teachers of higher education institutions and institutions of vocational education is to create a specialised online platform for professional communication. 84% of the respondents showed a positive attitude to creating such a platform, which is quite logical given the prospects for the introduction of information technology in the field of vocational education. Distance learning is developing rapidly, and higher education institutions have significant experience in the development, implementation and use of online and distance platforms for learning and professional communication. It is quite natural that we want to share the experience of creating and maintaining these platforms with vocational education institutions.

Summing up, it has to be highlighted that the survey showed that the creation of an effective system of vocational education, which is able to meet the needs of innovative development

of the domestic economy, is impossible without strengthening the dialogue and exchange of experience between higher education institutions and institutions of vocational education. Cooperation between these two education systems is necessary to create optimal conditions for the development of the vocational education system at the regional level, bringing the content and structure of vocational education in line with the needs of the labour market of the region. The solution of these problems is impossible without the formation of strategic projects for the development of the vocational education system at the regional level, development and implementation of programs for the modernisation of the vocational education systems to ensure the quality of education level.

ANALYSIS OF THE RESULTS OF THE SURVEY OF STUDENTS MAJORING IN "VOCATIONAL EDUCATION"

707 students of UEPA took part in the research. 53% of them are girls and 47% are boys. The age category of the research participants was as follows: respondents under 20 years old comprise 37%, 20-25 years old cover 57%, only 6% belong to the age group over 25 years old. 83% are bachelors and 17% are masters. The distribution of the respondents by study programs is shown in Table 2.

Table 2. *Distribution of the respondents by study programs*

Number of answers	% of answers	Specialisation of study programs
100	14%	Oil and gas business
82	12%	Food technology
75	10%	Energetics, Energy management
70	9%	Computer technology
70	9%	Technology of light industry products
63	8%	Occupational safety and labour protection
53	7%	Mechanical engineering
41	6%	Service sector
34	5%	Design
27	4%	Electronics, radio engineering and telecommunications
26	4,5%	Economics
18	2,5%	Metrology, standardisation and certification
18	2,5 %	Transport and logistics
12	1,5%	Electrical engineering and electromechanics
8	1,1%	Publishing and printing business
7	1%	Welding and material sciences
2	0,3%	Pedagogy
1	0,15%	Food technologist

The contingent of the respondents according to the place of residence is distributed in the following proportions: 62% of them live in the city, 23% live in an urban-type settlement, and 15% live in countryside.

Thus, it might be stated that the sample of respondents selected for the study is quite representative in terms of the number of respondents and has all the properties of the full group of respondents, significant in terms of the research objectives. The quality of the survey and the reliability of the obtained results were also checked. All the respondents filled in the answers of the questionnaire without leaving any unanswered questions, which indicates the interest of the respondents in the survey and their understanding of the feasibility and usefulness of the study, as well as the importance of their own contribution to the findings. According to the results of the analysis of the completed questionnaires, there were no cases of contradictory answers. Verification of personal data was also performed on the basis of comparing the year of study of the respondents with their age and education level. The inspection showed that the obtained data do not contain random values, the ratio of the year of study with the age and education level of the respondents was duly observed.

The questionnaire consisted of an introductory part, where students provided information about themselves, and the main part, which consisted of 24 questions divided into the following groups:

- motives for choosing a specialty and a higher education institution;
- quality of organisation of the educational process;
- quality of organisation of practical training;
- employment.

The first group of questions to determine the motives for choosing a specialty and a higher education institution is included in the questionnaire for the following reasons. HEIs must consciously build their career guidance work and attract exactly those applicants who have the appropriate value orientations and motives for the successful acquisition of the necessary professional competencies. Therefore, it is important to know what factors influence the choice of entrants to higher education and the specialty that they expect to get from a higher education institution. It is worth paying attention to what makes an applicant stand out from the crowd, which makes them a person with their own demands and motives. Professionals involved in career guidance work in higher education institutions should know how a potential entrant chooses an education institution, the analysis of what information they carry out, and what parameters influence their decision. The distribution of the students' answers regarding their choice of the specialty is given in Table 3.

Table 3. *Distribution of the respondents' answers regarding their choice of the specialty*

Number of answers	% of answers	Reason for choosing the specialty
219	31	advice from acquaintances, friends, relatives

208	29	prospects of getting a stable income
186	26	desire to teach
186	26	employment opportunities
186	26	being in demand in the labour market
159	22	opportunity to study at the expense of the state budget
151	21	prestige of the profession in society
143	20	hobbies and interests since childhood
132	19	social significance of the profession
123	17	opportunity to be creative
92	13	by chance
92	13	coincidence
55	7	family traditions
55	7	desire to follow the example of parents or other relatives
39	5	difficult to answer
38	5,5	influence of the media
1	0,15	personal interest
1	0,15	other

The calculation of the median value, which divides the data sorted by ascending order into two equal parts, shows that the first five reasons have the greatest influence on the choice of the specialty. In general, the order of the reasons for choosing a specialty basically coincides with the order in similar studies [2 - 4]. This, on the one hand, confirms the reliability of the results obtained, and, on the other, characterises our students as individuals whose benefits do not go beyond the generally accepted limits. Interestingly, the distribution of the responses given by people under 20 is more even; whereas people aged 20 to 25 consider the prospect of a stable income and the advice of acquaintances, friends and relatives to be the most important reasons (see Figure 8).

The reasons for choosing an educational institution are presented in Table 4.

Table 4. Distribution of answers on the choice of educational institution of the respondents

Number of answers	% of answers	Reasons for choosing a particular higher education institution
360	51	profession that I like can be obtained here
276	39	it is interesting to study here
261	37	the institution provides high quality education
208	29	it is easy to study in this institution
184	26	advice from parents, relatives, friends or acquaintances
156	22	there is a possibility of internship abroad
153	21	the institution is well located (near the place of residence, easy to get to, etc.)

137	19	it is possible to obtain a double diploma of an international standard
125	18	in this institution tuition fees are reasonable
115	16	high reputation and prestige of the institution
115	16	the institution has a high reputation
112	15,5	there is an opportunity to work by the specialty while studying
108	15	the institution has a strong material and technical base, developed infrastructure (dormitory, library, canteen, computer classes, etc.)
88	12	low competition for admission
41	6	it is difficult to answer

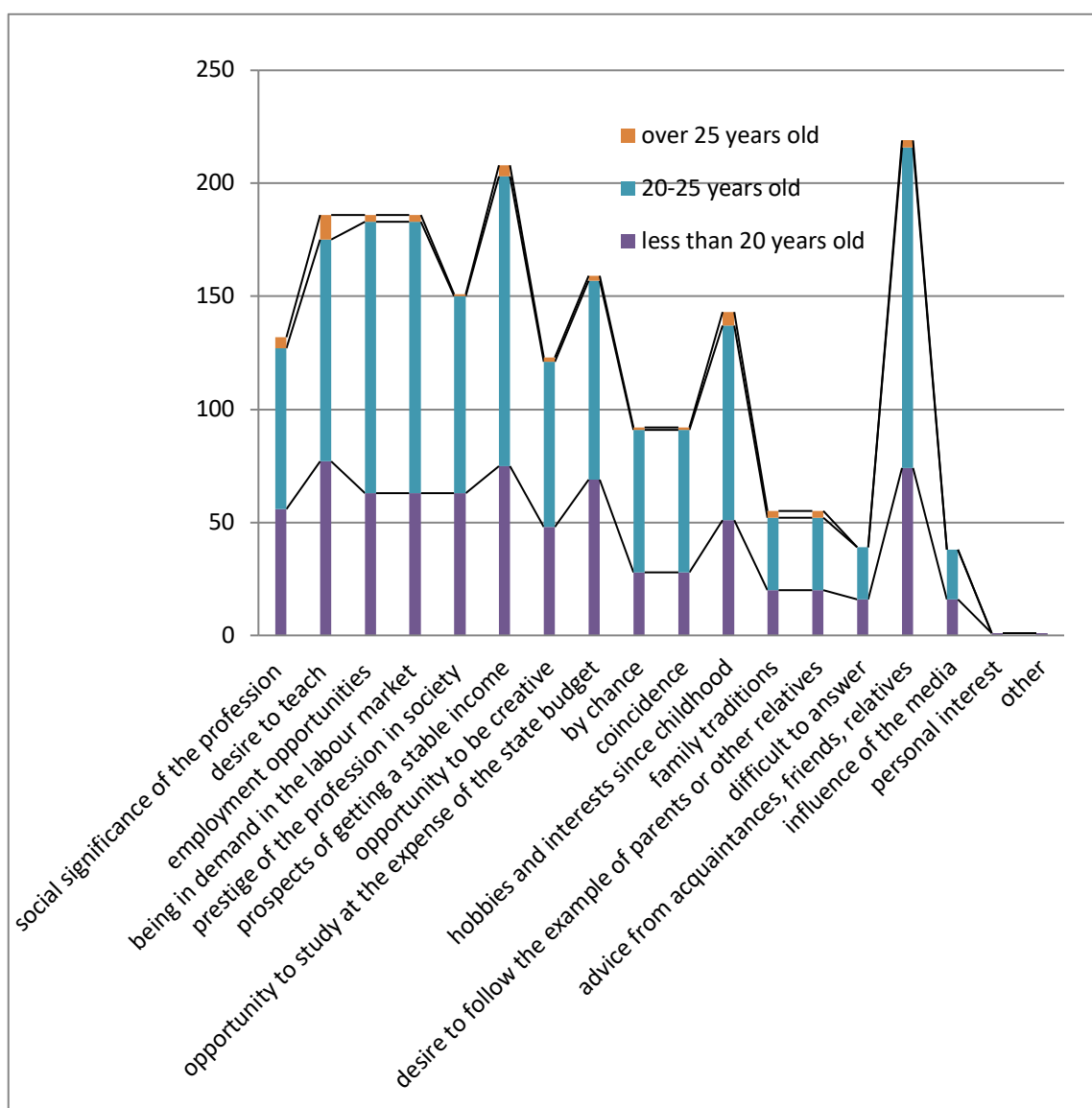


Figure 8. Distribution of answers concerning the reasons for choosing a specialty depending on the age of the respondents

As in the previous case, the median calculation shows that the first five reasons have the greatest influence on the choice of a particular HEI. However, the distribution of responses between people under the age of 20 and people from the age of 20 to 25, in contrast to previous results, is almost identical. (Figure 9). This primarily relates to the first two most important reasons: the first one is 'you can get a profession that you like here and the second one is 'it is interesting to study here'.

The research of the level of satisfaction with educational process in the selected educational institution showed a high level of students' satisfaction. 93% of respondents gave a positive answer: 58% of students were completely satisfied, 35% were rather satisfied. This result shows the high appreciation of the HEI's activities, which is aimed at providing the student with all the necessary needs: training conditions, quality teaching staff, leisure conditions, professional development, etc.

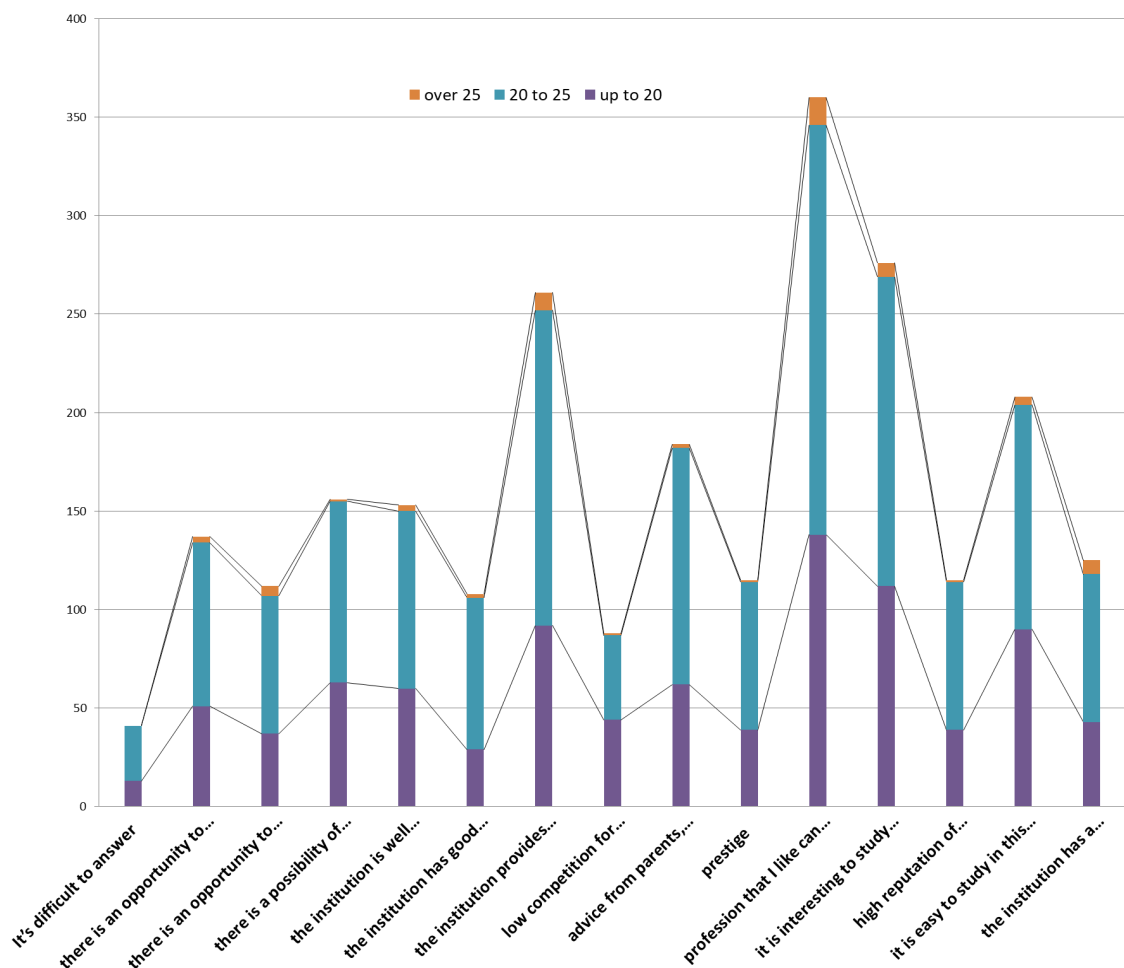


Figure 9. Distribution of responses according to the reasons of the HEI's choice depending on the age of the respondents

In order to detail the identified factors which make students happy with the study at UEPA, the level was evaluated according to the following criteria. The list of criteria for evaluating the level of educational process satisfaction included the following items:

- training content;
- teaching methods;
- availability of training materials;
- list of selected disciplines;
- the willingness of the teaching staff of your institution to answer your questions, provide you with the necessary support during training;
- the readiness of the administration of your institution to answer your questions and provide you with the necessary support during training;
- practical training while studying;
- involving practitioners in training;
- availability of the information you need in regard to the educational program and the organization of training;
- availability and ease of using educational facilities and necessary equipment;
- availability and ease of using hostels, canteens, sport facilities;
- participation in international projects while studying;
- organization of students' extracurricular activities.

Each answer was evaluated on a five-point scale (from 0 to 4 scores: 0 – difficult to answer, 1 – satisfactory, 2 – good, 3 – very good, 4 – excellent). The results of evaluation are shown in Figure 10.

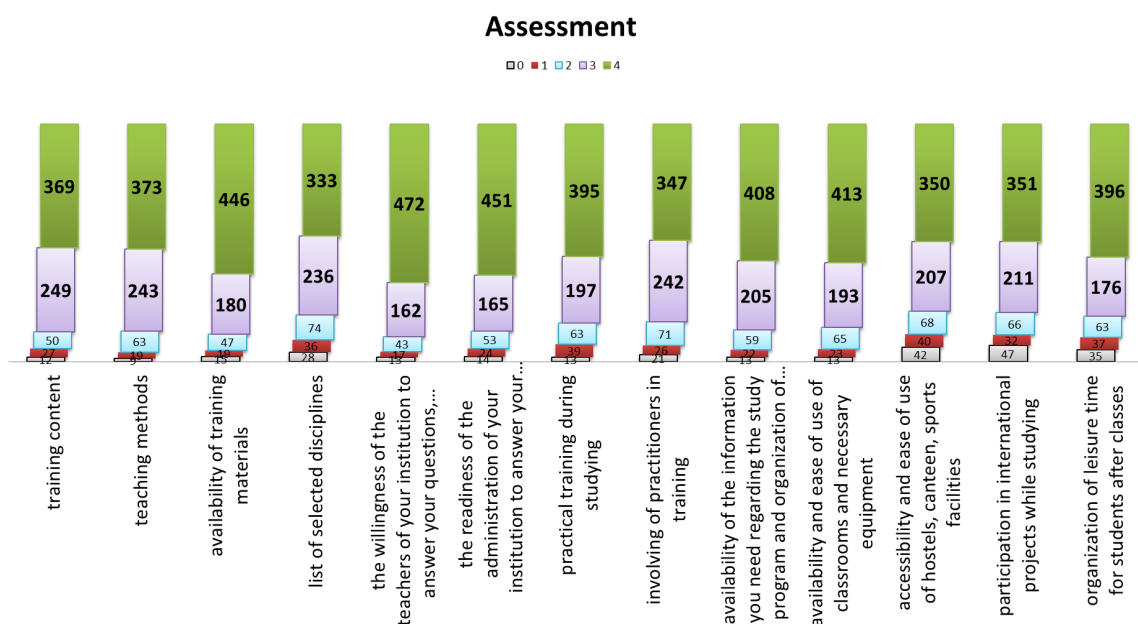


Figure 10. Distribution of responses on satisfaction with studying at the HEI

As we can see, students' satisfaction with all evaluation criteria is at a fairly high level in this case too. Although, we analysed the most negative responses and found that the biggest complaints of students are the availability and convenience of using hostels, canteens, sport facilities (82 negative responses), the organization of students' extracurricular activities (72 negative responses), participation in international projects while studying (79 negative responses) and the list of elective courses (64 negative responses). And, however, the evaluation of these directions of the HEI's activities are quite insignificant as a percentage, but it is important to pay attention to these positions in order to further reduce the number of negative responses.

Students' satisfaction with the level of teaching disciplines is presented in Figure 11.

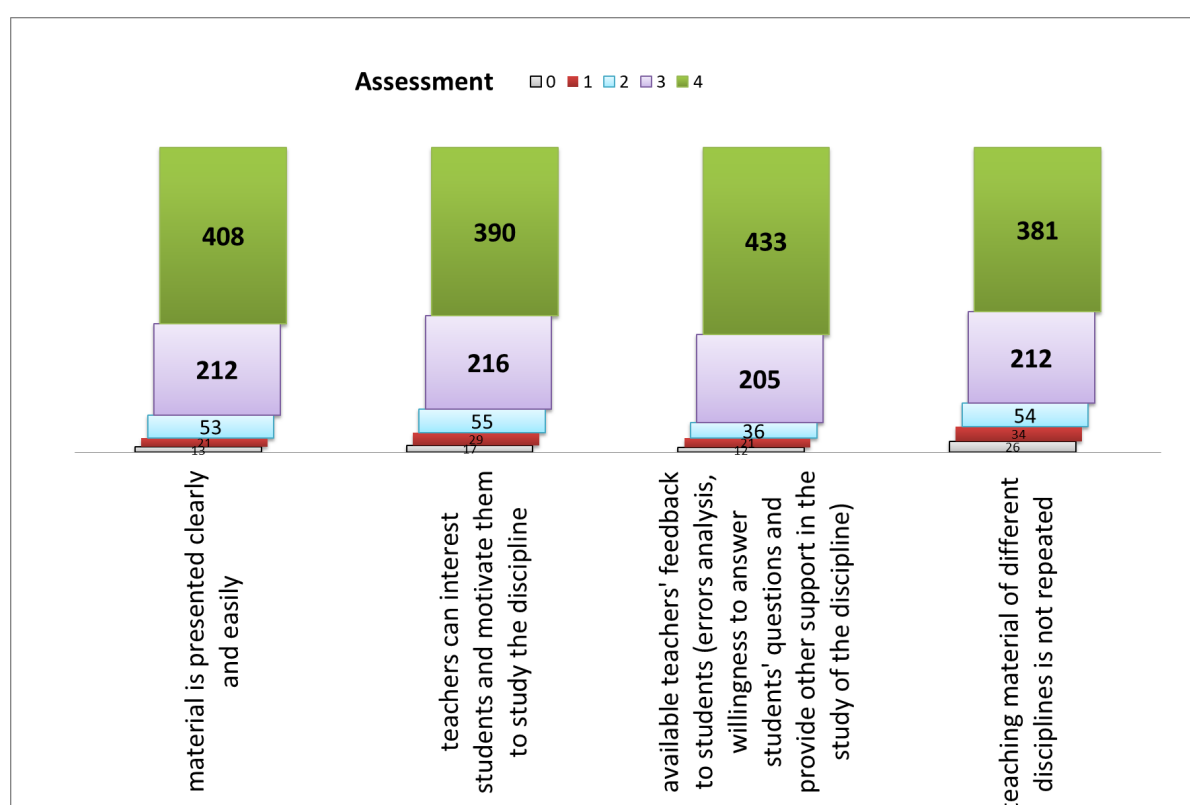


Figure 11. Distribution of responses on satisfaction with quality of teaching disciplines

Students positively evaluated the level of teaching disciplines, noted that the material is taught clearly and accessible, there is teachers' feedback to students (analysis of mistakes, readiness to answer students' questions and provide other support while studying the discipline), teachers can interest students and motivate them to study the discipline (level of positive evaluations from 85% to 90%). As for the negative responses, the largest number of them (101 – which is a sum of responses with 1, 2 and 3 scores) is presented under the criteria "Teachers can interest students and motivate them to study the discipline", and under the criteria "Training material of different disciplines is not repeated" – there are 114 negative responses.

In the next question, students evaluated the organization of the training internship (teaching practice), if they have already passed it. The results of evaluation are presented in Fig. 12.

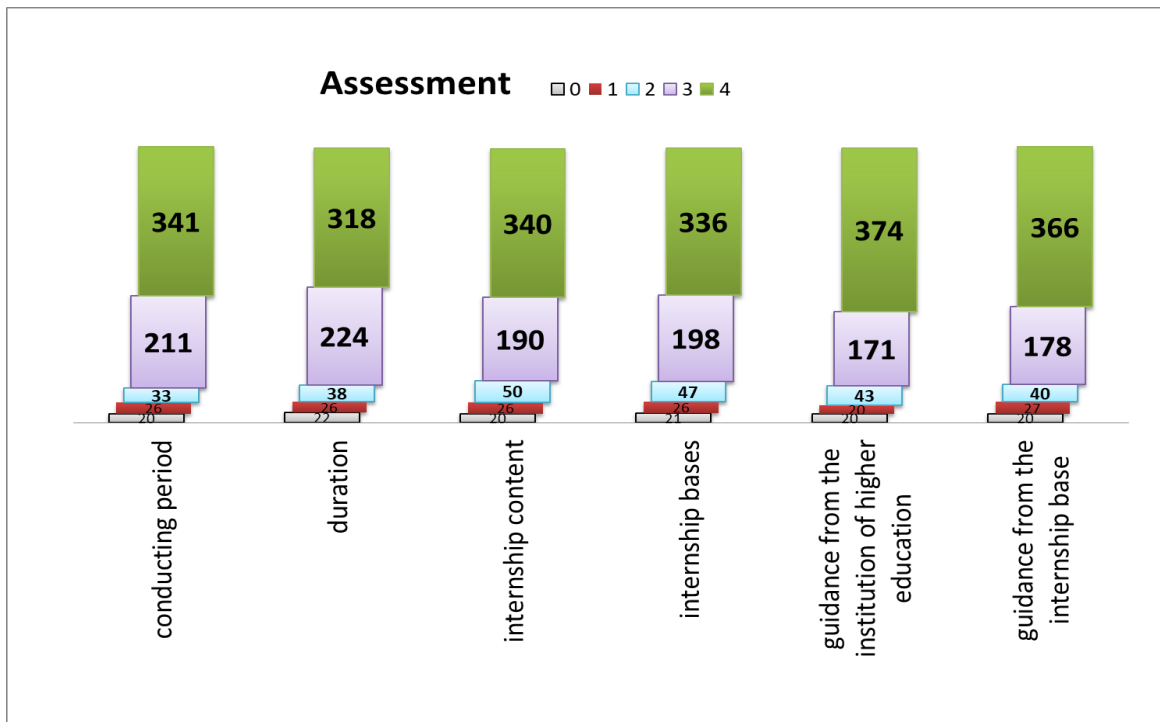


Figure 12. Distribution of responses on the evaluation of the organization of training internship

Positive responses were obtained for all positions, which were evaluated by students.

It was suggested to evaluate the organization of traineeship (productive practice), if students have already passed it. As in the previous question, the students' responses showed the high level of organization of students' traineeship. The results of comparative evaluation of different types of practices are presented in Figure 13.

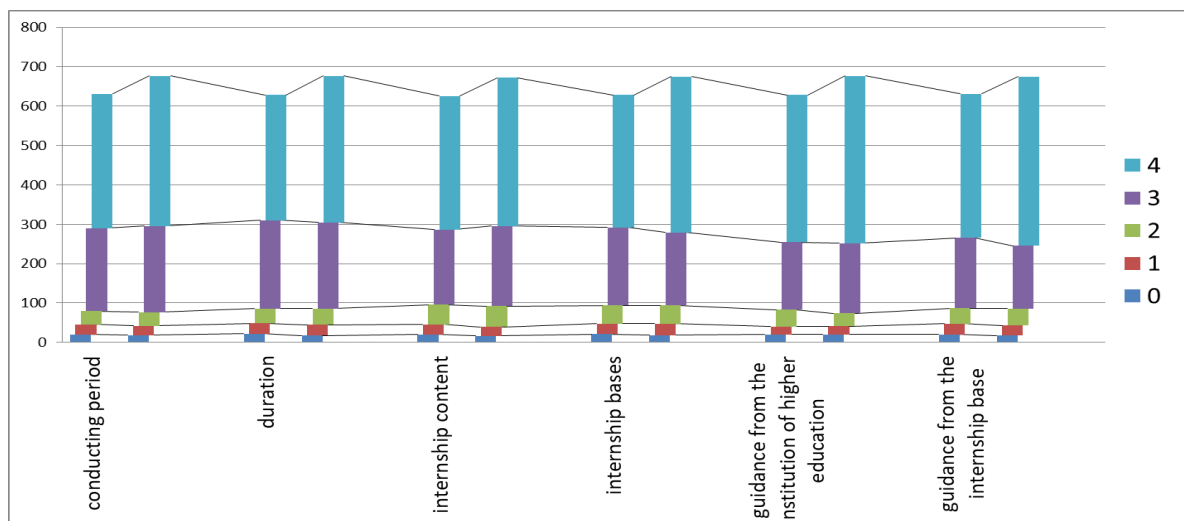


Figure 13. Pairwise comparison of evaluation of the organization of training internship and traineeship

The obtained responses differ slightly, which can be considered as an indicator of the reliability of the obtained survey results. On the other hand, the students' evaluation of traineeship is slightly higher than for training internship. This result can be explained by the greater propensity of students to practical work.

In the next section of the questionnaire, students evaluated their experience of conducting classes during their internship, if they have already had it. Almost three quarters of students positively evaluated their experience in conducting classes.

During their studies UEPA students have different types of practices /internships (traineeship, technological, pedagogical). Therefore, they get not only knowledge, but also the whole set of skills and abilities, as well as they form their readiness to carry out successfully professional activities, which is illustrated by the results of the survey. The presence of small number of responses "difficult to answer" indicates that these students have not had any training internship yet.

The analysis of knowledge and / or skills that students lacked in order to conduct classes properly showed that not all students can decide on the answer. Only 216 students answered this question. Processing the results on this question causes some difficulties because only a third of students of 216 respondents who answered this question, told that they have a sufficient level of preparation. This is about 10% of the total number of respondents. The possible reason might be the formulation of the question, that puzzled student.

According to the results on the level of students' readiness to conduct classes at vocational education institutions, it was found out that half of the students rate their level of preparation for conducting classes as "Satisfactory ". The other half of the students were divided into two parts: a quarter of the students decided that their level of preparation is "Very good", and the other quarter thought that they have a level of preparation either "Bad" or "Difficult to answer". In other words, the results of the analysis of the level of students' readiness for conducting classes at vocational education institutions have shown that the administration of the HEI needs to pay attention to the real results of training internship of students.

To determine the need for changes in professional training by chosen specialty, students were asked to answer in a free form. As usual for these types of questions a smaller number of responses was received in this case (395 respondents from 707 did not answer). However, the analysis of the provided responses makes it possible to draw certain conclusions. The main wishes of students ("more practical classes", "more special disciplines", "more traineeship") can lead to a single denominator: it is needed to have more practical orientation of the study process.

The next group of questions was aimed at clarifying the participation of students in improving the organization of the study process in the HEI. As for evaluation of students'

involvement in the discussion of the ways of improving the organization of the educational process with teaching staff and the administration of the educational institution, all the results can be roughly divided into three parts. One third of the students was involved in the discussion often, one third - sometimes and one third were not involved. The students' opinion is the most important indicator of determining the quality of the HEI's activity. That's why, their involvement in the discussion of the ways of improving the organization of the study process is a necessary condition for improving the quality of educational activities of the HEI. It is worth mentioning students' responses to the previous question demonstrate their interest in improving the quality of vocational education. So, it is definitely necessary to pay attention to this issue and develop a plan of activities to involve students in discussing the ways of improving the organization of the study process.

The next question concerned the ways and experience of such students' involvement. The obtained results are presented in Table 5.

Table 5. *Distribution of answers on the forms in which students were involved in the discussion of the ways of improving the organization of the educational process*

Number of answers	% of answers	The forms of the discussion of the ways of improving the organization of the educational process
284	40	survey initiated by teaching staff
271	38	survey initiated by the administration of the institution
173	24	oral questioning initiated by teaching staff
153	22	survey initiated by student government
67	9	correspondence through a trust box
2	3	correspondence with teaching staff in the chat of distance learning
1	1,5	oral communication with the rector, the dean, the curator
1	1,5	communication with the rector
2	3	meeting with the dean and the rector
1	1,5	communication with the curator
1	1,5	joint meetings

The most common form of involving students in discussing the ways of improving the organization of the educational process is a survey initiated by teaching staff or a survey initiated by the administration of the institution. The next common form of involvement is an oral questioning initiated by teaching staff or a survey initiated by student government. Correspondence of students through a trust box may not be a very common form of their participation in the discussion of the ways of improving the organization of the educational process, but it is present and may become more widespread in the future.

A separate group of questions concerned the information space of the HEI. The results of evaluating the frequency of using sources of information about news and events at the HEI are presented in Fig. 14.

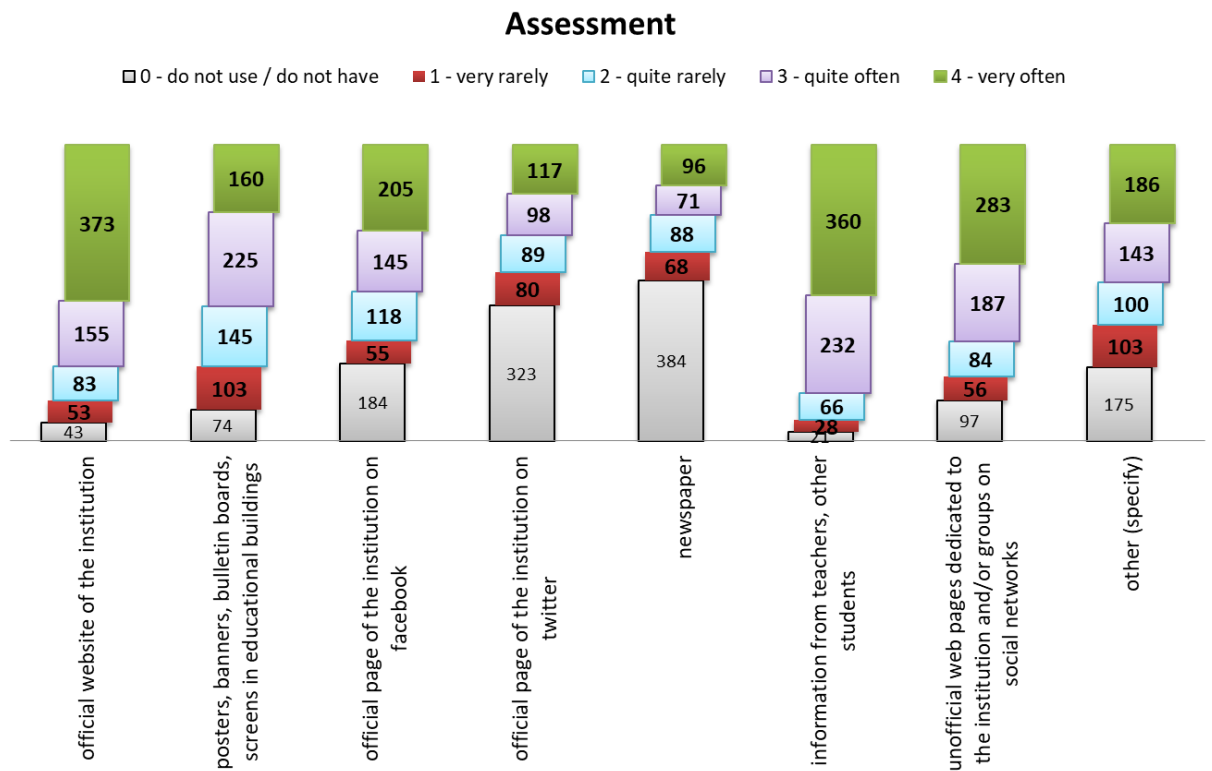


Figure 14. Results of evaluating the frequency of using sources of information about news and events at the HEI

Expectedly the most frequently used source of information about news and events at the HEI is the official website of the academy, as it acts as an integrative link in shaping the information environment of the academy and in implementing management functions. The main feature of the academy website is that it allows any user to access all the resources of the information environment of the academy according to its level of authorization. The web-site serves as a starting point for students and the teaching staff in obtaining the required information, access to educational content, obtaining other functional services. The response "information from teaching staff, other students" received almost a similar evaluation. But, if we consider that teaching staff and students often broadcast news from the academy website, the frequency of using the website as a source of information will be much higher. So, choosing the ways of disseminating information among students it should be taken into account their preferences and monitor changes in priorities in the using of various services.

The following results were obtained on the availability of information about vocational education institutions, where students can be employed after graduation: 49% of respondents have the necessary information about the VET institutions, 24% have only a

very limited information, 27% are not aware of their possible employment at VET institutions. It is necessary to pay more attention to the awareness of students about vocational education institutions where they can be employed after graduation, as well as to involve them into activities with vocational schools, where the HEI participates.

In Table 6, the distribution of responses on the sources of information about vocational education institutions is presented. The results are presented in quantitative and percentage form.

Table 6. *Distribution of answers on the sources of information about vocational education institutions*

Number of answers	% of answers	Sources of information about vocational education institutions
326	46	information from teaching staff
326	46	other students
289	41	official websites of institutions
199	28	job fairs
199	28	internship in vocational education institution
188	26	official pages of institutions in social networks
146	21	advertising brochures, posters, banners, bulletin boards
134	19	unofficial web pages dedicated to the institution and / or groups on social networks
55	8	exhibitions

It must be said that almost all options of the answers listed in the question are popular with students. This testifies to the real interest of potential graduates and future teacher-engineers in the problem of employment, in the solution of which the interest in employment in vocational education institutions is not the last place.

Cooperation of the HEI with institutions of vocational education was the subject of research in the next group of questions. 25% of students gave a positive evaluation to the level of such cooperation, which indicates the effective work of the HEI in this direction.

The distribution of the results of responses to the question directions of such cooperation is presented in Table 7.

Table 7. *Distribution of answers on the directions where it is advisable to develop cooperation between higher education institutions that train VET teachers and vocational education institutions*

Number of answers	% of answers	Directions of the development of cooperation between higher education institutions that train VET teachers and vocational education institutions
315	44	employment of future teachers

285	40	organization and conducting student training internship
258	36	conducting in occupation-specific courses
223	31	development of the educational program content
223	31	joint implementation of educational (training) projects
152	21	conducting classes in psychological and pedagogical courses
59	8	I do not consider it relevant
1	1,5	I do not know

The analysis of the results showed that students approve the cooperation between higher education institutions that train VET teachers and vocational education institutions in almost all areas. They were somewhat wary of conducting classes in psychological and pedagogical courses, but apparently, these classes were enough for them in the academy itself.

It was interesting to compare the evaluation of the teaching staff of the HEI and students on the involvement of VET teachers in conducting practical classes. 41% of the HEI teaching staff consider that it is important to involve VET teachers for conducting classes in the HEI, 36% of them think that it is difficult to answer, 23% of the teaching staff do not see it as relevant, and in contrast to the HEI academic staff 47% of students answered “yes”, for 39% it was difficult to answer, and 14% gave a negative answer. So, students, unlike the teaching staff, are not interested in the problem of workload, the distribution of the obtained groups of evaluation does not differ significantly and less than a half of students consider that it is important to involve VET teachers in conducting practical classes.

The more detailed information on the reasons why to involve vocational teachers in study process at HEIs is presented in Table 8.

Table 8. *Distribution of the number of answers on the reasons for involving VET teachers in conducting practical classes*

Number of answers	% of answers	Reasons for involving VET teachers in conducting practical classes
44	6	More practical experience
27	4	To share experiences
x	2	It is difficult to answer
5	0,7	More experience working with teenagers

The small number of answers is due to the fact that the answers were provided only by those students who consider that it is important to involve VET teachers for conducting classes in the HEI.

The research of the current employment of students showed that 29% of students constantly combine study with paid work. From time to time, 42% of students combine study with paid work and 29% of students do not combine study with paid work. Girls and

boys work in equal numbers. It is interesting to analyse the distribution of responses to this question by study years of students. It is logical to assume that first-year students spend all their time studying and are not distracted by other things. However, according to the survey, the number of first-year students who are working part-time exceeds the number of working master students and is only inferior to the number of working fourth-year students. The results of students' responses regarding current employment are presented in Figure 15.

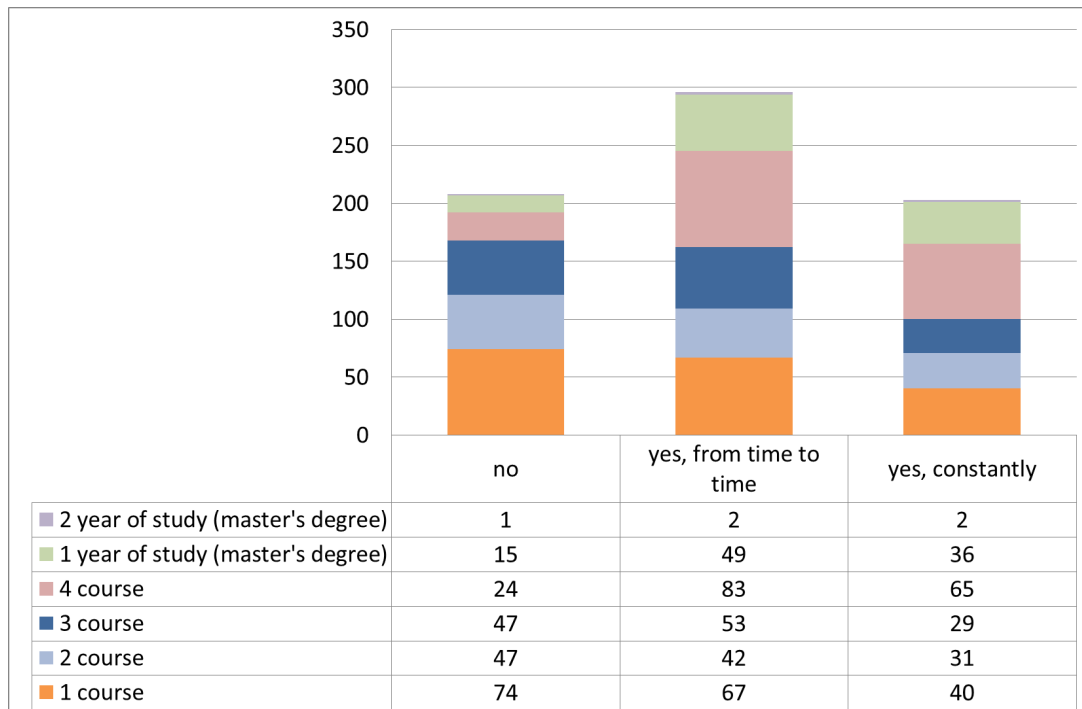


Figure 15. Results of students' responses regarding current employment

The research of the current employment of students also showed that the work where students work fully corresponds to the specialty / educational program of their study is only in 18% of cases, partially corresponds in 33% of cases, and 29% of respondents have absolutely different from their speciality job. It should be noted that the number of students working by their specialty increases as students move to senior courses.

Concerning their future employment, only 20% of students answered that they see their career in teaching in VET, 27% of respondents rather agree that they will work as vocational teachers, for 15% it was difficult to decide and answer. 24% of the surveyed students rather not inclined to work to vocational schools, and 14% definitely do not want to work as vocational teachers. Unfortunately, today the majority of graduates of engineering and pedagogical HEIs with little desire go to work at vocational schools. This is primarily due to the low pay to a modern, promising, active specialist.

The distribution of answers to the question that was asked in addition to the previous one "If not, where do you intend to work after graduation" is presented in Table 9.

Table 9. *Distribution of answers on the intention of students to work after graduation, if they do not intend to work at vocational education institutions in the future*

Number of answers	% of answers	Future place of employment
201	28	the place of work will not be associated with educational activities
106	15	engage in entrepreneurial activity in the field of educational services
45	6	at higher education institutions
43	6,5	at institutions of professional pre-tertiary education
28	4	at institutions of postgraduate education or adult education centres (training centre, industrial training centre, corporate training, etc.).
22	3	at a scientific institution
15	2	at educational and methodological centres (office) of vocational education and training

Unfortunately, the analysis of students' answers shows that almost one third do not want to have anything to do with education. As we noted earlier, this is primarily due to the low pay to a modern, promising, active specialist in vocational education and low career prospects in this area.

GENERAL CONCLUSIONS

The analysis of the current state of UEPA's partnerships with vocational education institutions in the field of VET teacher training aimed at developing and piloting new governance structures between Ukrainian partner universities and regional VET institutions has revealed a number of important issues on the way to modernizing VET teacher training at UEPA and developing partnership-based governance with institutions of vocational education.

The focus is on bridging the theoretical and practical gaps between university education and teaching requirements in vocational education institutions, and creating a new partnership-based governance structure between relevant stakeholders in the system of training a vocational education teacher.

UEPA is fully ready to work in the direction of improving the quality of educational services and creating a positive image of the teaching profession. For this purpose, UEPA participates in the reforms in the domestic system of higher and vocational education initiated by the Cabinet of Ministers of Ukraine, and strives to be able to instantly respond to the requirements for the level of pedagogical education in the developed countries of the world and comply with the requirements of the domestic and foreign labour markets for VET teachers, which is expected to be achieved by:

- creating a new system for the selection of applicants (active use of modern social resources to popularise the specialty "Vocational Education" and all its specialisations which are opened at UEPA; expanding the bank of potential customers for training VET teachers; forming and implementing new mechanisms for building a dialogue with customers and potential applicants);
- opening new specialisations, in particular "Professional education. Economics. Economic and business education", using the experience of finding, regulatory support and training of such specialists, obtained within the Erasmus+ projects, "Improving Teacher Education for Applied Teaching in VET (ITE-VET)" No. 574124-EPP-1-2016-1-DE-EPPKA2-CBHE-JP;
- strengthening the interaction of UEPA with customers for training VET teachers by involving specialists in this industry into the educational process of UEPA, organising regular joint seminars with the staff of the Methodological Centre, stakeholders, employers, etc.;
- updating the bases and programs of pedagogical internships for students not only in Ukraine, but also abroad, which requires the creation of flexible curricula as well as development, coordination, approval and implementation of regulatory and informational-methodological materials;
- improving industrial training and practice-oriented training of future teachers in the direction of developing the industry and reforming the vocational education system by establishing, expanding, consolidating direct and reverse links between UEPA and enterprises, organisations, institutions; timely adjusting curricula and programs at UEPA; modernising the workshops;
- actively implementing innovative and interactive technologies to ensure the success of the educational process in the conditions of face-to-face (full-time), distance and blended learning, which can increase students' interest in education and their future profession, help them combine studies and work, compensate for the gaps in knowledge, help with the choice of an individual development trajectory;
- creating flexible training programs as well as full-time and part-time internships for VET teachers;
- modernising the classrooms, which will increase their functionality and, thereby, bring students closer to the real conditions of professional pedagogical activity, significantly expand their understanding of the range of modern teaching aids and peculiarities of their use, allow them to perform educational tasks, including teaching internship tasks, and help to create their own training courses.

To tackle and solve these issues, develop management tools based on partnerships with vocational education institutions, as well as to further implement the Erasmus+ project "New mechanisms of partnership-based governance and standardisation of vocational



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teacher education in Ukraine (PAGOSTE)", UEPA plans to open the "Centre of Teaching and Governance Excellence for VET in Ukraine", which will ensure professional development of administrations and teachers of vocational education at a high level. The centre will promote the popularisation of vocational education in Ukraine and the development of career guidance systems for vocational education institutions.

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